

AMERICAN JOURNAL OF INSANITY

AN ANTHROPOLOGICAL STUDY OF THE SMALL
BRAIN OF CIVILIZED MAN AND ITS
EVOLUTION.

By CHAS. E. WOODRUFF, M. D.,
Surgeon, U. S. Army, Fort Riley, Kansas.

One of the most remarkable popular misconceptions, creeping also into scientific literature, is the belief that civilization has increased and is still increasing the size of the skull and the weight of the brain, and that education and thinking are equally efficient causes of brain growth. This paper is written to call attention to the fact that man's brain developed by the laws of natural selection during hundreds of thousands of years, the "fittest" variations in each generation being the most intelligent. This process must have ceased in central Europe about 20,000 to 40,000 years ago when the average skull was at its maximum. Since then civilization has made it more and more possible for brains smaller than the average to be as "fit" for survival as those larger, so that civilization gradually checks further evolution of brain growth and replaces it by greater and greater normal surviving variations. Hence, for the last 20,000 years the average size and weight of the brain have been diminishing, yet variations are getting normally further from the average, and the longer civilization lasts the more certain it is that we will find larger brains than have ever existed before, and an increasing number of specimens below the average of the present lowest and smallest skulled races. The change to mod-

ern conditions has been, of course, so slow that appreciable differences may have not occurred until the last 2000 years.

Everyone who has given any consideration to the subject, knows that the basis of civilization as well as all evolution is "division of labor," yet when this rule is applied to mental operations, we fail to see that this same law makes it possible for smaller specialized brains to be the fittest for survival in the new civilized environment where each man may know how to do but one little thing well.

It is an old story now to compare organized human society with the organized human body. Each is a compact colony of individuals, each of whom though a distinct creature, is wholly dependent upon the colony for existence. In each organism the individuals are so highly specialized that each has lost capabilities possessed by its ancestors and is able to do but one thing. Each community is protected by a police force or army, whose duties are to capture or destroy the enemies of the society. Both organisms have similar ways of getting supplies of food in bulk, disposing of wastes, distributing goods in certain channels, similar methods of exchange or barter, a central government, home-rule in local affairs, telegraphic, telephonic and telescopic exchanges each with its "central" or nerve centre, and all so inter-related, bound together and dependent, that if one system is injured they all suffer. We need not carry the analogies further. They are myriad for the simple reason that each system of cooperation was evolved as a result of the same method, division of labor.

In their evolution each took essentially the same course. At first the protozoon was a single independent bit of living matter, every part of which acted as muscle, stomach, brain or skin as occasion arose. It could do every thing and had to do every thing. In course of time the cells did not separate when each became half of the mother cell, but they lived in a colony. At first they were independent, but finally they helped each other, and they thus had increased chances of getting food and escaping enemies. Those colonies finally survived in larger numbers in whom the individuals became specialized, for that is economy—the guiding law of evolution. In a colony the individuals were bound together the more closely, the more they became

dependent upon each other, or the higher the organization the greater the specialization of the component cells. By natural selection, the division of labor has become so great that changes of structure have made cells of identical parentage so different that one does nothing but transmit light in the cornea, another contracts in a muscle in obedience to the signals of another, one can make pepsin while another can make some other chemical, and another, the leucocyte, is a policeman, soldier and mechanic. Indeed the leucocyte seems to be the only one of these numerous cousin cells which has preserved the ancestral jack-of-all-trades capacity.

Like the protozoon, man was at first a jack-of-all-trades, and a skillful one too. Instead of being gregarious he was probably a free lance like an amoeba, possibly living in pairs either temporarily like the birds or a more or less permanent union. After a long time those who were grouped into communities survived because they could live better than in independence. By union a community was better fitted for existence just as the protozoon colonies. A long time after living in a clan, man was almost as independent as when he was a free lance. He practiced all his functions just as before and the colony was nothing more than a group of individuals living independently but near together. It was precisely like the first multicellular organisms which were composed of identical cells each of which did exactly like all its neighbors. There was no division of labor.

This was probably the period of man's greatest average brain development. Long after his organization into tribes and even nations, at or even after the dawn of civilization, each man could do every thing well. He could hunt, fish, build houses, make arms, chip flints, be a soldier and fight, protect his home, tan hides, make clothes of skins and sandals of leather, look after a wife or so, and he knew much about the weather, woodcraft, zoology and botany too. Indeed he could do all these things before he had learned to talk except by a few cries and grunts. Dr. G. A. Reed (*Present Evolution of Man*) says he has seen Maoris of New Zealand equal in power of mind to average Europeans.

The Hon. G. Hilton Scribner (*Pop. Sci. Mo.*, Feb., 1895) elaborates this idea of the versatile intelligence needed for existence

in a savage life. We should think for a moment what a large amount of brain it requires to do all this successfully. The skill and intelligence needed in woodcraft alone would tax the mental powers of the average modern man. Then we must think of the result of not having enough intelligence to do all this,—inevitable death—for in those conditions men were too busy keeping themselves alive to have any spare time to preserve the weaklings.

During this time and for a very long time previous, survival of the fittest was the same thing as survival of the brainiest. It is certain that when by climatic changes, man's environment became unfriendly, he had to think, scheme and contrive or die. There must have been a rapid evolution of brain if we are to judge from embryological evidence as we will see later, and of course a great mortality among the unfit less intelligent. It is possible that a single thought may have been sufficient to save one man out of many, for if he had happened to think that he ought to hide some food, he may have had enough to tide him over a period of winter starvation which carried off most of the tribe. We know that just such period of stress, carrying off the less provident, actually occurred among our Pacific Coast Indians as late as the end of the first half of the present century.

This evolution of brain by natural selection must have taken an immense time, for it took advantage of only slight variations from the average, and in this condition, variations must have been very slight as all men were on a dead level of capacity. Everyone was the equal of his neighbors for they all had to do precisely the same things, know the same things and possess the same skill or die.

Primitive men discovered that one of their number could chip flints or hunt a trifle better than the others, and the mechanic or specialist arose by normal variation, but we need not go through the tiresome details known to everyone. In course of time the professions arose from that of priest. As knowledge increased, one man could not learn it all, so that from lack of capacity and time, one had to confine himself to law, theology or medicine. At the present time, the increase of knowledge is so enormous that one cannot become expert except in one little branch. We have progressed so far that many call it an

age of specialists, but in principle it is not one particle more an age of specialists than when the first savage devoted himself to chipping flints in return for meat because he found that he could thus get more meat for less work. What has attracted our attention is the extremely minute subdivision of the modern division of labor, as for instance, among the toy makers in Germany, where a laborer may for years make but one part of one little toy.

An old teacher in one of our schools was very fond of saying that our skulls only held a quart and that we could not make them hold more. If we filled the measure with one thing, some of that would run out when we poured in a half pint of something else. He merely meant that modern science was of such extent that if we were to be successful we should devote ourselves to one thing. If, for instance, we tried to know the botanical details of the drugs we use, we might forget our surgery and be pushed to the wall by some young fellow who had a quart of surgery in his skull but not one grain of botany and who could cure his patients though he had never learned where opium came from. Instances are known of successful specialists grossly ignorant of even the rudiments of the grammar of their mother tongue.

The corollary following from the above is the important fact to remember. A man possessed of a single useful faculty may succeed in civilized life, though his general intelligence may be so limited that he would have perished in a savage life. He is adjusted to a civilized environment and fit for survival, but in a savage environment he would be so out of adjustment as to perish in the struggle for existence. Quite recently it was necessary in a western army post, to discharge from the army a man who was so stupid that after six months' careful instruction he was unable to learn any of his duties and could not be trusted on guard or in any capacity requiring intelligence. He had such a small head that it is quite certain that his brain was much smaller than the average. He was perfectly healthy in all respects and for years had made a fair living as a railroad laborer, as his father had done before him. Psychologists have frequently called attention to the fact that in civilized life among laborers there are many imbeciles whose defects are hidden

because they are never called upon to do anything requiring intelligence. All of these men are fitted for survival now, whereas in prehistoric times they would have perished before maturity if not killed by their parents.

If small specialized brains were the only ones fitted for survival then it would follow that as civilization advanced there would be a progressive diminution of all brain weights—a conclusion not supported by any evidence. On the contrary, every degree of intelligence can find a sphere of activity in which to struggle successfully for existence as a specialized unit in organized society. They are all fitted for survival and they all leave offspring.

How far specialism can go, that is, which specialists are the best fitted and will eventually leave the greatest number of healthy offspring to carry on or change the species, does not concern us here at all. We need only note that the same law applies to man as to all other species, as a rule those individuals who vary the furthest from the average are the least adjusted to the environment and either perish or leave fewer and fewer offspring; while those who vary the least from the average are apt to be better adjusted to the environment, are better fitted for survival and as a rule leave the greatest number of healthy children. Both the classes of greatest and least intelligence generally die out soon, and in all civilized countries both the upper and the lower classes of society are constantly being recruited from the great middle class—the real people. Great men rarely trace lineage back far before it is lost in mediocrity, unless the family enjoys a parasitic existence as in the old world. Classes of men can be likened to a tree in which all the branches too far from the trunk break off and the central ones carry on the growth, which may not be perfectly vertical but in the direction best fitted to the environment. It is the same law to which Ernst Haeckel calls attention—the extinction of aberrant types and the persistence of those which hug close to the main evolutionary stem.

The fact to be repeated and enlarged upon for our present purpose, is not which degree is the best fitted for survival but the more important one that they are all far better fitted for survival than in a savage life, and do survive and leave offspring,

whereas in savage environment even slight variations from the average might perish. In other words, variations, upon which evolution depends, are very slight in savage life but become greater and greater as civilization advances. The dead level among the savage does not permit of sufficient variation to produce the specialist needed in modern civilization, and no savage nation having civilization thrust upon it ever carries on that culture except in the slow and tedious method of natural selection during thousands of years of the evolution of variations from the average.

We have already mentioned that there is no single body-cell which can accomplish anything like the varied amount of work done by its amoebic ancestor. Nevertheless all the body-cells working together as a "team" can do infinitely more than an equal number of amoebae. It is the result of the cooperation of specialized units. Likewise there are few, if any, civilized men who can accomplish anything like the varied amount of work done by their prehistoric ancestor. Yet all the men of a modern civilized nation can accomplish infinitely more than an equal number of savages, for civilization is "the harmonious orchestration of specialists." This dependence of specialized men makes independent existence impossible and it will be forever, for nations are real live organisms wholly composed of dependent specialized units. Consequently the further advance there is in civilization the greater are the normal variations among the men of that nation. We now find extreme normal healthy variations in every character—physical and mental. In skull capacity there are greater variations than ever before and these variations must increase in time. The more savage a tribe or the more remote in time, the greater is the similarity of the skulls in any one locality. When we go back to prehistoric skulls, as those of the Russian plains, they are said to be so nearly alike as to appear to have been made from the same mould. This is shown more graphically in the curves in the chart, Fig. 1. This great variation of the civilized brain is in accordance with that law of organic evolution that, "A part developed in any species in an extraordinary degree or manner in comparison with the same part in allied species tends to be highly variable." Man's brain cannot be an exception and it must have begun to

be highly variable within a short period after it made that abyss between itself and the ape brain. Like other changes it was very slow at first, the most marked results probably being within the Christian era.

We must constantly keep in mind that men do not drift into specialties by chance any more than a color-blind man takes to making oil paintings. He cannot take up any employment like a savage, for he is limited by hereditary variations going back many generations. He limits himself to that which he can do best, not because knowledge is of such enormous extent and he

CHART I.

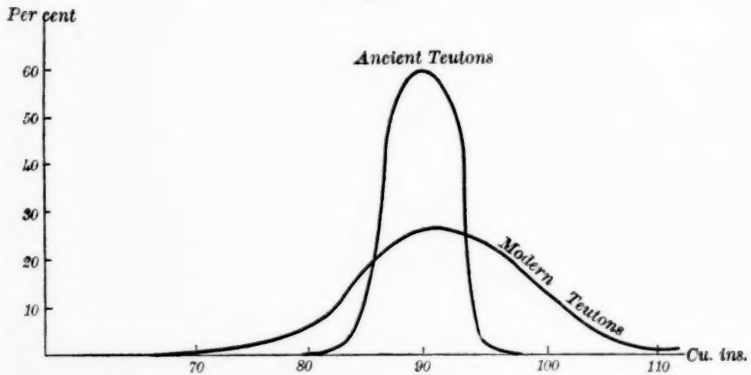


Diagram showing how civilization reduces percentage of average skulls and increases percentage of variations from the average. Numbers given are purely hypothetical.

has not time to do more than one thing, but because he is unable to do many things. His success may be trifling if he does not discover what he can do. This limitation of the modern man is remarkably like the limitation of the modern specialized high-bred dog. There is precisely the same difference between the intelligence of the wolf and the domesticated dog that there is between that of the savage and civilized man. The wolf's brain is about the average size of the dog's and the wolf shows more cunning and intelligence than any one dog no matter what that dog can do. Yet the wolf's intelligence is of a more general type, as in savage man, while the dog shows special

intelligence in one direction and the different breeds vary enormously. This variety of abilities makes the sum total of the dog's intelligence much greater than that of all the wolves. A high-bred dog may be an idiot in everything except his specialty, just like the narrow specialist among civilized men, and the mixed breed or cur is apt to be quite intelligent, is easily taught tricks, and, to a certain extent reverts to the more generalized intelligence of the wolf.

It was said above that primitive man, or his mannish ancestor, must have been put to such an intense struggle for existence that when he began to replace brute force by his wits, there must have been a tremendously rapid increase of intelligence in a geologically short time, as shown by the fact that as the environment became unfriendly the *only* survivors were the most intelligent in each generation. Now we know, as Dr. Joseph Simms has shown (*Pop. Sci. Mo.*, Dec., '98) that the colder and more forbidding and unfriendly the country, the larger are the brains of the natives—Lapps 102 cu. ins., Swedes 100, Anglo-Saxons 96, Finns 95, Anglo-Americans 94, Germans 92, Celts 88, Malays (?) 86, Chinese 85, Tombs of Gizeh 84, Embalmed Semitic 82, Egyptians 80, Fellah 79, Bengalese 78. Hot-tentots are said to average 75, Negroes 61 to 69, and Malays may be as low as 57 to 62, according to other writers.

About half way between the lowest man and the highest ape with its 34½ cu. ins., we find the pithecanthropus, 45 cu. ins. (?) or perhaps more.

The explanation of the above differences in brain weights is quite simple, for we all know that as we go from hot to cold countries, the struggle for existence becomes more and more severe and that the survival of those slightly larger and more intelligent than the average would account for the evolution of larger brains and bodies the further north we go in Europe, the Scotch, for instance, being about the tallest people on earth. In America it is the same way, the tall people being the northern Indians and the Patagonians, and the general trend of increase of brain is away from the tropics. A more complete explanation of this difference will be deferred until we have touched upon the place of man's origin.

The circumstances and the time of man's brain evolution are

then certainly interesting and important speculations if we are to comprehend in their fullest value the above differences in brain weight. Our pre-glacial ancestor, in that tropical climate which extended nearly to the pole, may have had so little trouble in getting food that it was the active and agile intelligent ones best fitted to escape the enemies of the times, who were the best adjusted to the environment and who survived in greater numbers. Now what a change occurred in the very slow and gradual approach of the long cold! What a struggle began with a wiping out of species which could not find fit variations adjusted to the change, and what a mortality there must have been among our most stupid ancestors, and therefore what a rapid evolution of brain when the most intelligent survived, and no others, in each generation. Is it not possible then that brain developed during this cold and as a result of it? When that era began man's ancestor was a highly intelligent animal and as it receded he became a brainy man. As the cold lessened and eased the struggle, the evolution of brain stopped, but the longer it continued in the case of the men imprisoned so to speak, in the north, the bigger grew their bodies and their brains, recognizing of course, that a cold too intense and scarcity of food may so alter the conditions as to check brain and body growth as with the Eskimos. Will there ever be found undoubted evidence of pre-glacial man or only of a pre-glacial intelligent animal too brutal to be called man? What a vast difference there must have been between the defensive intelligence of the pre-glacial ancestor and the offensive intelligence of the glacial descendant. The one had foods in plenty and had to have brain to defend while the other had little food and had to have greater and greater brain to contrive, look ahead, invent and think.

Man cannot do mental work until he gets the tools and the necessary leisure time. It can therefore be accepted as an axiom that brain makes civilization and that civilization never makes brain. The biological law that "function precedes structure" does not mean that animals ran before they had legs, but that they got along some way and that those which had rudimentary organs survived in larger numbers and evolved the structure; nor does it mean that man talked before he had vocal

organs nor was civilized before he acquired brain, but that there was an attempt at these things necessitating a natural selection of those in whom the organs were the best adapted by variation. The need existed first, the attempt to fill the need or function followed and natural selection secured the best tools. This law merely states how natural selection obeys the law that "necessity is the mother of invention."

Now when did man first use his brain for this purpose? Surely not until the struggle was less intense and he was not occupied all the time in "making his living" like the Lapps and Finns. Perhaps as the glacial time receded or as he migrated south in the early glacial, man found himself, if we may so speak, with more brain than he actually needed for his lessened struggle and leisure to think of other things and slowly and painfully began the division of labor. It took less time to secure necessities and he proceeded at once to devise means of making it easier still. The price of a day's labor, that is the amount of finished product a man can turn out, has been increasing ever since.

It is perfectly natural then that civilization should arise in countries which being warm, first attracted northern man and which are now terribly hot. It is evident that there was no further need for increase of brain by the destruction of all except the most intelligent, so that its evolution in that direction stopped in the Egyptians and Akkadians while it was still going on rapidly to the north of them. Evolution took the direction of dependent specialization in the south. It is also perfectly clear why it was that when these belated bigger and brainier men of the north did get the leisure they too evolved their own civilization, but when they received some hints from the south they carried civilization to its present position. They had better tools to work with.

As soon as when from environmental changes, man had more brain than was needed for the purpose for which it had been evolved, its growth instantly stopped and specialization began. "The Teutonic races, in their barbarous state, two thousand years ago, possessed brains as large as now, and so with other races" (J. C. Nott). The earlier a nation began its civilization then the smaller must be its average brain. No wonder then

that the North American Indian had 100 cu. centimetres more of skull capacity than the Peruvians. While the modern average European skull is 93 cu. ins. in capacity, that of barbarous tribes is 82, the Toltecs 77, and the Peruvians 73. The latter began to learn too soon. For their environment they had more brain than was needed to prevent extinction while the European went on acquiring 20 cu. ins. more before his environment changed. It is also evident why it is that those people who escaped from the struggle soonest are unable to carry their civilization beyond a certain point,—they did not begin with enough brain. It is also evident why other small-brained peoples in the tropics have evolved no civilization at all, for they entered the environment of their pithecoïd ancestors where specialization is impossible from the extreme ease with which food can be obtained. These matters will be again referred to.

EVIDENCE FROM ARCHAEOLOGY.

In whatever direction we seek, we are sure to find remarkably clear evidence that man's brain developed to its maximum size long before the dawn of civilization by the process of natural selection in an environment which eliminated the least intelligent in each generation, and that civilization always checks the process. The evidence from paleontology and archaeology is very much to the point. As the first anthropoid apes occur in the miocene rocks throughout the world, we are sure that the common ancestor of apes and man existed at least early in the miocene, but most probably in the eocene and possibly earlier. It is generally accepted as a fact that during the long hot miocene he had advanced far in his physical evolution and was here and there probably intelligent enough to chip flints, though the latter "finds" are not entirely accepted as "worked" implements. Though decidedly ape-like he was already in advance of the apes, for the latter do not even yet use implements, but advance in intelligence in such a hot climate where food was plenty could not have gone far in bridging that abyss between the highest ape and the lowest or earliest man.

In pliocene times the critical change began and the cold increased until it culminated in the ice age. In the middle of

the pliocene the difference between the ape and the man-ape was sufficiently marked to account for the total extinction of the former and survival of the latter. The ancestor of man could adjust himself by the survival of the fittest variations in intelligence and structure, but there were no fit variations among the apes. So that the change to cold which wiped out the latter caused the rapid evolution of the former. It is during this time of increasing cold, that all authorities agree that a creature we can call man actually appeared. So that when the cold had come so great as to be called a glacial period 240,000 years ago, intelligent man must have existed, for from this time on we have evidence of his handiwork all over the earth.¹ This early rapid and wide spreading of primitive man or his immediate ancestor must have been a direct result of intelligent overcoming of enemies and adverse conditions as it certainly was not due to an amelioration of the environment. His birth-rate was formerly just large enough to prevent extinction, but now through lessened death-rate it permitted him to spread over the earth. Overpopulation began fully 250,000 years ago and ever since then men have been fighting each other for more room and are at it yet. Where the first steps took place does not concern us here, we are only to note that at the beginning of the glacial cold a man existed, a most brutal, horrid, ape-like man to be sure, but able to struggle against extinction and to spread. He may be described "as a little less than a man" or "a little more than ape" for the pithecanthropus is placed not far from this time either a little sooner or a little later.²

Now began the glacial cold with which we are mostly to deal. For the next 160,000 to 200,000 years there must have been a survival of the most intelligent, because during this time we find undoubted evidence of man's increasing intelligence. The first finds are crude in the extreme and remained so for at least

¹ Sir Jno. Evans (address at Toronto meeting of the Brit. Assn. for the Advancement of Science, 1897) states that paleolithic implements identical with those found in the drift deposits of the Seine, Thames, etc., are found in S. Africa, N. Africa, India, and in Spain, Portugal, etc.

² It is interesting to note that scientists are divided into three classes as to their opinions of this fossil; some consider it a low man, others a high ape, but the most consider it a link or man-ape.

160,000 years, as such evolution must have been slow though tremendously rapid as compared with the previous epoch. Though there is a slight improvement in these early weapons, it is not until the glacial or "drift man" has advanced to the "cave man," that we find a marked improvement, and the caves themselves did not begin their formation until after the mid-pleistocene, probably 160,000 years ago. It is indeed not until we reach the upper or very late cave layers that we find a needle with an eye, a drawing of a mammoth and other evidences of a brain of large size. So it was not until the end of the glacial time that brainy man appeared, and though the man of Spy may still have had ape-like physical characters, the Engis skull was so good that Huxley said it might have belonged to a philosopher. No doubt the periods of rest in the interglacial periods gave occasions for culture and spreading. In such times success was not so rigidly to the most intelligent, for food was more plentiful.

Haeckel mentions the very sudden blossoming out of varieties under certain conditions, leading to a most rapid evolution and Prof. Le Conte calls attention to the "Critical Periods in the History of the Earth" when there are rapid changes in environment from oscillations of the crust, changes in physical geography, climate, etc., causing a very rapid evolution of living forms in that place. These periods separate "eras," when changes are slower. The last period was the glacial when changes were tremendous and the resulting era he calls the "Psychozoic."

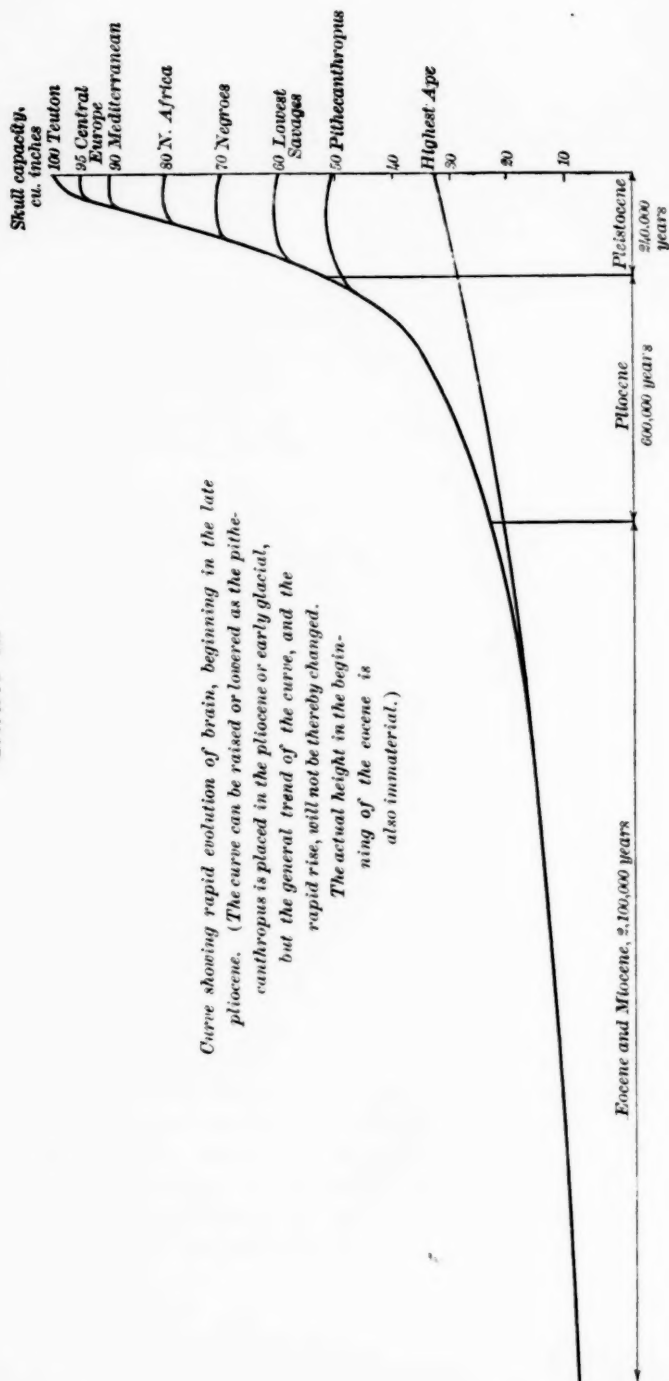
The possibility of man living in Northern Europe in glacial times should not be doubted even if his intelligence for much of that time was less than that of the lowest living man, for the essential difference between that time and the present was only one of the relative length and severity of the summer and winter. Omitting the changes in the elevation of the crust—for they are of minor effect, one degree of latitude being said to be equivalent to 250 feet elevation,—the essential feature of the glacial times was the increase in the eccentricity of the earth's orbit and the position of the earth in perihelion in summer instead of at winter as at present. So that whereas we now have long mild

summers and short mild winters we then had long severe winters and very short terribly hot summers,—not long enough to melt all the snow except along the southern lowlands, but hot enough to cause severe floods each summer.

We now come to an abrupt change in the next finds—the post-glacial or neolithic, on or near the surface, in cave floors, camps, middings, pile dwellings, and sepulchres. The change is so abrupt that it was once interpreted to mean an immense lapse of time, and it is often considered an enigma because the time is positively known to be very much shorter than the paleolithic. The last glacial finds are not older than 80,000 years at the greatest and some of them are much more recent, and the first neolithic finds cannot be put further back than 20,000 years. The connecting link or the mesolithic between the two, then certainly had at the very greatest 60,000 years to work improvements which we will subsequently show must have culminated rapidly when once started. We know that the rigorous climate softened slowly and that the ice age may be said to be still in existence for some of its glaciers have not yet melted. When the Cro-Magnon race was alive, Europe was 8° colder than now. Hence the same condition causing the survival of the most intelligent and yet a severity of climate not permitting of leisure may have gone on 20,000 years, or even 60,000 in a milder form, after the supposed end of the glacial 80,000 years back. It is perfectly safe then to conclude that 20,000 to 40,000 years ago mesolithic man reached his highest brain weight, and that not until that time did his environment soften sufficiently to give leisure to begin the neolithic stage.

To recapitulate, at the beginning of glacial times, 240,000 years ago, man was still very ape-like,—in 160,000 years more towards the end of that period he had a large brain but was still brutish, and in 60,000 years more he was a much brainier savage. These lengths of time are positively necessary for the evolution of brain by natural selection, even in the relative severity of such a severe struggle, and after the conditions became softer it still required an immense time to produce the slight difference we are presuming to have existed between the earliest mesolithic man of 80,000 years ago and the earliest neolithic of 20,000

CHART II.



for the most rapid and greatest advance was in the 160,000 of the severest glacial times.³ (See Chart II.)

This conclusion is also in strict accordance with the well-known fact that after the brain had reached its largest average, the development of culture was still a painfully slow process, and that abstract ideas were not reached for an immense time, being still absent from the lowest men. Men are mostly copyists and the great mass of mankind does nothing towards the advance of culture, which is the sum of the tiny new increments added in each generation. If European mesolithic men were as intelligent as North American Indians we can be assured that several generations could go by without one single invention improving their lot.

An apparently sudden appearance of neolithic culture also depends upon the fact that civilization increases in a geometrical rate, because each new invention adds something to all previous ones, or acts as a multiplier, not a mere addition. Great inventions also are often a mere assembling of many previous minor ones. The steam engine for instance was built up of thousands of inventions, dating back even to the discovery of metals, and it is but one factor in all subsequent advance. It is also

³ The rapid evolution of brain in the post-pliocene explains the paucity of fossil remains of the connecting links or transition forms. Only an infinitesimal fraction of land forms leave any trace anyhow, and we can never expect to find remains of these missing links in this short glacial period. Nor can we ever expect to find them in the southern hemisphere to which they may have migrated, for the change in climate would cause great changes in form. The present lower races are vastly modified descendants of later emigrants, who may have exterminated the earlier brutish emigrants, only to be themselves forced on by later arrivals. The most simian men on earth are said to be the groups of Bosjesmens, Hottentots, etc., forced into south Africa by brainier later arrivals. Perhaps they are descended from earlier types of European men than even the Negritos, who are regarded by Prof. W. Flower as the type from which all the negroes sprang, in the same way the Veddahs of Ceylon are considered by some scientists the lowest men in the world, and are the descendants of earliest immigrants.

There are numerous animals whose ancestral forms are wholly unknown, because of their rapid evolution in critical periods; the elephants, for instance, appear very suddenly and, excepting a single dwarf fossil, none of its immediate ancestors are known.

a matter of comment that great revolutionizing inventions are really very simple affairs, so simple indeed that we remark as Huxley did of Darwin's idea, "Why did we not think of such a simple thing before?" The advance in culture is so tremendously rapid now, not because the multiplier is any greater than with the mesolithic savage but because the multiplicand is tremendous. It is quite likely that a colony of modern farmers suddenly made ignorant of metals and transported to our iron fields, would take just as long, if not longer, to discover metals on their farms than did neolithic man, for they invent and discover just as slowly as ever. Marsh's estimate of 12,000 years for a savage to civilize himself must be entirely too short. It must have taken 160,000 years for paleolithic inventions to accumulate sufficiently to amount to a mesolithic stage, remembering of course that in the early part of that time he had less brain to work with than the lowest living races.

It was not until 60,000 years more had passed that the sum of mesolithic inventions reached a neolithic age and the more rapid increase towards the end of course made it appear like a sudden jump in culture. In no other way than by assuming a geometrical increase of culture can we explain that remarkable jump to the neolithic. The mesolithic had but rude tools and pottery, no grain and the only domestic animal was the dog. The new age had pottery, artificial caves for houses, then lake dwellings, and such a sudden appearance of cows, pigs and goats that they were once thought to have been brought into Europe from the east, though a much later invasion really did occur. Yet we know from recent experiments that new varieties of domestic animals can arise in a much shorter time by artificial selection than we once thought—the estimates of biologists are undergoing constant reduction. So that the domestication of the above animals, though perhaps started by the mesolithic man, may have been accomplished by the neolithic in a short time, for we know that these bones were fairly numerous in the late neolithic. W. H. Ballou (*Pop. Sci. Mo.*, Aug., 1897) states that "paleontology can throw no light whatever on the domestication of animals,"—possibly because the process began too late,—and "zoology has so far rendered no material assistance,"—possibly because the process was so rapid.

Indeed the pig and the horse were unknown to the early Egyptians and also to the Akkadians before the Semitic invasion. The wonderful resemblance between many breeds of domestic animals for a long time after birth so that experts may be deceived as to the breed until near maturity, is strong evidence of the very late specialization of these varieties by artificial selection.

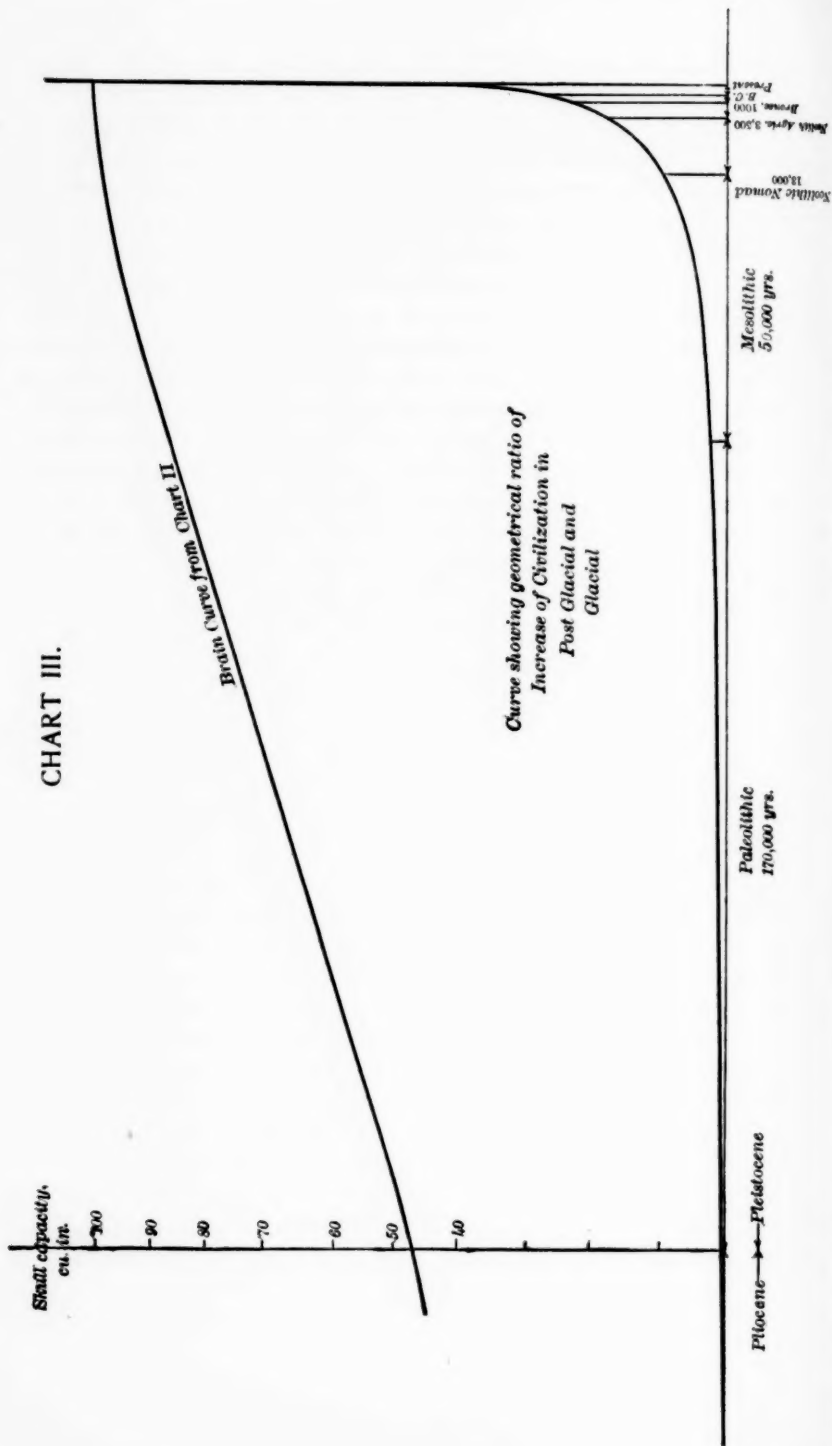
These suddenly appearing domestic animals are almost exclusively gregarious, and had undergone a natural selection for millions of years, fitting them for a semi-dependent existence in herds, and the transference of that dependence to man was an easy matter and need not have taken long. Indeed such wild animals as monkeys, parrots and jackdaws, deer, etc., are quite easily tamed. When once started artificial selection is rapid, and their sudden appearance instead of indicating long time is really indication of man's increased leisure and intelligence. Domestication of gregarious animals was like enslaving the lower races of men, it took very little time to make them good dependent slaves by killing off the independent ones.

The only non-gregarious domestic animal is the cat, and though it has been subjected to enormous artificial selection it is half wild even yet, rather defying any toning down and it can lead an independent wild existence better than any other farm animal, though they all revert to a wild life in one generation it is said. Its origin also has never been explained, though it seems to be the survivor of a recent prowling intruder after man built houses and was tolerated by neolithic man because it helped to rid him of other prowling thieves, a case of commensalism. It is still more attached to the place than to the man, occupying a place midway between the domestic animals and the scavengers like rats, which are undoubted instances of commensalism.

The modern rapid evolution of new varieties of plants shows how rapid their evolution from wild species can be, and fully accounts for their sudden appearance in neolithic times. Goodale does not seem to anticipate much trouble if all our fruits were utterly exterminated as he could produce them again from wild pomes and berries.

The geometrical progression of neolithic civilization took

CHART III.



about 13,000 years to enable man to abandon a nomad pastoral life and begin to build houses and take up agriculture, for the oldest of such evidences in Europe date about 5000 B. C. By this time the sum of human knowledge was so great that it took but 3500 years to learn the use of copper and bronze; and in the finds of this period the bones of the ox, sheep, hog and dog predominate over those of the stag, goat, wild boar and fox, showing that hunting was now only an incident of life. It now took but 1000 years to learn the use of iron. After writing was invented of course the progress was more rapid still as it was not so easy to forget, and the periods separating the later time into epochs get nearer and nearer together until we reach the present, which dates from the commercial use of electricity less than a generation ago. It is interesting to note that the number of years usually given to these periods of civilization can be arranged in a fair geometrical proportion, each about $\frac{2}{7}$ of the preceding,

600,000.....	protolithic,
170,000.....	paleolithic,
50,000.....	mesolithic,
13,000.....	neolithic nomads,
3,500.....	neolithic agriculturists,
1,000.....	copper and bronze.

This brings us to 500 B. C., since when the advance is too rapid to be thus figured out as will also be seen from Chart III.

After the variations of brain were well advanced, there were more inventors and better ones, so that the multiplier itself increased, and the increase of civilization was then even greater than a simple geometric progression.

If we introduce Prof. McGee's protolithic stage of a creature using stones but too stupid to fashion them, and give this a value of 600,000 years, it fits into the above geometric progression, being about $\frac{7}{3}$ of the paleolithic. It also makes the time estimates translatable into Prof. W. H. Holmes' estimates of 60,000 post-glacial 600,000 of glacial times, 1,000,000 pliocene and 3,000,000 miocene. It also takes us into the uncertain borderland between the pliocene and glacial when we have the pithecanthropus, surely a protolithic creature and one whose

geologic horizon is so hard to place because of the gradual change from pliocene climate to glacial. Indeed all time estimates of man's origin are curiously susceptible of agreement if we would only consider the uncertainties of dividing geologic times, and the impossibility of determining when the advancing creature should be called man, because everyone goes back to a time when increasing cold destroyed all but the brainiest and caused evolution of brain by survival or selection of the brainiest—the only possible method of evolution of man.

Such estimates agree also with the estimated ages of mesolithic finds in bogs which are all the way from 4000 to 16,000 years old in places where this age was delayed as we will shortly explain, and that the middings of the earlier mesolithic people must have taken 10,000 to 12,000 years to collect and that from slow oscillations or the earth's crust such remains are now on raised beaches 40 or 50 feet above the present shore line and in other places are miles inland. From all the data M. de Mortillet estimates that though the paleolithic age began in Europe 238,000 years ago, the neolithic could not have begun until 20,000 or perhaps 10,000 years ago. It is to be remembered that as these ages have gradually developed one into the other it is impossible to say when one ends and the next begins. He divides human life into 222,000 years of quaternary, 6000 of prehistory and 6000 of history.

By migration into milder climates some tribes of paleolithic man of course were placed in the ameliorated conditions permitting of culture thousands of years before climate changes permitted the like for the stay-at-homes in Europe. Indeed some races must have migrated so soon that they never could civilize themselves and never have passed beyond the paleolithic stage for they did not stay long enough to develop the necessary brain. Others who migrated later had more brain but never could develop a culture beyond the barbarous stage and never will. Only those who remained behind are now the highest and brainiest. For this reason—lack of brain—it is an invariable rule that early tropical civilizations stop soon never to advance. We inherit the benefit of the long and brutal destruction by natural selection of all our ancestral relatives except the brainiest. Early cessation of the process in Southern Asia

has been the eternal damnation of the people; they are fixed forever.

EVIDENCE FROM HISTORY.

Historical evidences are very strong on all the above points. The first civilizations to develop were in the fertile tropical valleys, the Nile, Mesopotamia, and in India. We can be assured that as paleolithic man was contemporaneous in Europe, Asia and Africa he must have migrated into Southern Asia and Africa where the conditions were not so murderous for the less intelligent, and therefore, where his maximum brain development was earlier and less. Though he began the slow mesolithic stage very early, say 100,000 years ago, he had less brain to work with and took a far longer time to go through the mesolithic stage than did the European; perhaps he took fully 80,000 years or more, for the earliest civilization of the Akkadians is not placed further back than 6000 B. C., or those of Nippur 7000 or 8000 B. C., so that its beginnings could not possibly be much earlier than those of Europe which we know was quite well advanced in 5000 B. C. These Akkadians were known to be mountaineers from the north and the early immigrants they found in Mesopotamia were checked in development so soon that they probably could not get beyond a paleolithic culture. North of Persia are tremendous deserts where there are indications of innumerable cities in the time when the climate was different, water was plenty and an Asiatic Mediterranean extended to the Arctic. This area could have accommodated a mass of humanity and the Akkadians may have been merely a western mountainous offshoot. Perhaps they were able to advance this civilization further than their relatives for it certainly was remarkably advanced 2000 years after we get our first evidence of it. When the delayed and more barbarous Semites crept in about 4000 B. C., they advanced the civilization further still and formed the Chaldean and Assyrian cultures. Hebrew means "from beyond" Mesopotamia. They, themselves were overcome by the delayed and more intelligent Aryan Persian, coming originally from the colder north, and these in their turn submitted to the further delayed Macedonians. The Persians by the way were conquerors of a Mongolian population which they found upon their arrival—a possible Akkadian outpost.

Egyptian beginnings, totally unlike Asiatic civilization, were probably contemporaneous with Akkadian, not antedating those of Europe many thousands of years, for they did not have iron until about 1200 B. C., only 700 years before it entered Europe, and our first evidence of them is not earlier than 6000 or 7000 B. C. Yet it was a wonderfully high civilization with domesticated animals, temples and astronomy, building pyramids and using copper at 5000 B. C., and bronze 3000 or 2000 B. C. We can presume that they ended their slow mesolithic stage some thousands of years earlier, but at the most it was not so remotely anterior to that of Europe. It is said to have been reported that borings have brought up a copper knife at 24 feet depth, indicating 8000 B. C., and pottery at 60 feet or 6000 B. C. in the early neolithic. Flints have been found in early quaternary soil. Being smaller brained from early migration they must have taken a longer time to get a start, for they used bronze three thousands years longer than the Europeans, and we can presume at least 80,000 years to the mesolithic and perhaps longer. The geometric rate of increase during their long neolithic could well have developed astronomy to the flourishing state it was in at 4000 B. C. Their traditions say that all this civilization arose in Egypt and was not imported.

Prof. Flinders Petrie places the earliest Egyptian neolithic civilization at 10,000 B. C., and though he does not attempt to explain where this race went through its previous stages, he suggests a Libyan origin, as the earliest prehistoric skulls from both Egypt and the dolmens of Algeria are identical with modern Algerian skulls, and modern Kabyles in the Algerian highlands still make the same pottery that was made in Egypt at 6000 B. C. Yet there is nothing to disprove that the earliest culture may have been the culmination of a long stage indigenous to the whole of north Africa and that successive brainier invaders came in from time to time to carry it further than the paleolithic races, for he shows that there were at least four different types of men figured in the earliest times, their prisoners of war being still different; and yet the type was unified by 2000 B. C. and has not changed since in spite of ceaseless invasion and conquest, for the intruders die out. Egypt has always been a death trap and the present fellahin may represent a type

which migrated into the country by slow stages from Europe beginning 200,000 years ago, and perhaps taking half that time to develop by natural selection a race that can withstand the climate. Dr. Petrie mentions the invasion of 5000 B. C., probably from the Red Sea, and the high civilization which followed 4500 to 3500 B. C., decaying about 3000 B. C., blossoming out about 2600 B. C., again at 1500 B. C. after the invasions of the Hyksos.

The recently discovered Hittites were Mongolians of Asia Minor and Syria, no doubt of the same stock as the Akkadians. Being in a colder country than the Egyptians they were delayed but more intelligent so that they were not formidable until 2000 B. C., when they overran Egypt. Their civilization was taken up by the savage brainier Greek and carried further in the abstract ideas, and this was taken up by the more barbarous and later Italians, and this in its turn by the savage, big-skulled northern races in the Christian era. It is now generally accepted that the Greeks at the time of Homer were very recent arrivals, probably from the north, and found lower races already in possession.

In Scandinavia the ice continued the longest and prevented human existence until a late period except as Eskimos or else the evidence has been washed away, for the first evidence of his presence shows him to be already in the neolithic stage—a recent immigrant from the south where he had passed through his evolution. The cold was even then so intense as to keep him back, for bronze did not reach him until the 8th century B. C., about 700 years after it had reached central Europe. Iron did not come for another thousand years and yet these people have survived as our brainiest and have done much to advance modern civilization. The Scotch in the highlands were in a barbarous state until even a hundred years ago. The most delayed of all to take up civilization is the Russian Slav, and the present advance of that empire is in strict relation to the long time they have been under natural selection in the evolution of brain. Denmark also having been under the ice cap, has no paleolithic men.

Thus for 8000 years and probably 10,000, we have clear-cut historical records proving that the earth has always been over-

populated and that streams of men are constantly flowing to seek more room, forcing out older settlers wherever they are found; and that as a rule, until mediaeval times, the intruders or conquerors are less cultured, but more active, brainier and larger men from more severe climates, generally the north.⁴ From prehistoric times and at the present there is a human "drift" to the south in Europe and Asia, the immigrants being checked in development or actually degenerating as soon as the severity of the environment is lessened. Evidence could scarcely be clearer that brain grows in the cold until the owners migrate to the south.

EVIDENCE FROM PALEONTOLOGY.

	Thousands of Years.	Man's Ancestors.	Puber- ty (?).	Number of Generations.
Recent Pleistocene.....	270	Adam and Eve. Man, contemporary with Reindeer in France.		250 3,500
Pliocene.....	600	Pithecanthropus erectus.	16	17,000
Miocene.....	2,100	{ Anthropoid Apes. Lemures.	10	60,000
Eocene.....			5	420,000
Cretaceous.....	3,600			
Jurassic.....	1,800			
Rhaetic.....	1,800	Prototheria (first mammalia).	3	1,800,000
Keuper.....				
Muschelkalk.....				
New Red Sandstone....	4,000	Theromorpha.	4	425,000
Magnesian Limestone..				
Lower Red Sandstone..		Proreptilla.	4	250,000
Coal Measures.....		Eotetrapoda.	4	500,000
Mountain Limestone...				
Devonian.....	4,000	Dipnoi and Crossopterygii.	5	1,000,000
Silurian.....	2,700	First Fish-like creatures ..	3	900,000
Ordovician.....	2,700			
Cambrian.....	4,000			
Total.....	27,700			5,375,000

The above table is taken from "The Last Link," by Ernst Haeckel, being in great part calculated by Hans Gadow (Cam-

⁴ Dumont (Civiliza. et Dèpopulation) mentions the constant direction of ethnic currents along certain well-marked tracks—now the same as ever.

bridge). The time periods are minimum estimates—the most recent estimates for the mesozoic instead of 7 millions is 1000 million years, showing that the number of generations required to evolve man from fish-like creatures—5½ millions—is well within the probable limits. We must note that it took 60,000 generations to develop the pithecanthropus of the early pleistocene from the miocene anthropoid ancestor, 17,000 more to develop the lowest man of the stage of the Ceylonese Veddahs, and 3500 more to develop the man of 5000 B. C. in the dawn of history. This table illustrates very forcibly that in the evolution of brain by natural selection a thousand years are as nothing, and that the change in brain since the 5000 B. C. neolithic man, only 250 generations back, cannot be expected to be much and we have seen that they are not much. Secondly, that the brain must have developed in the 17,000 generations to lowest man and in the latter part of the 60,000 to pithecanthropus, for the tremendous gap between the ape and man must have taken all this time by the survival of the most intelligent. The selection being less rigid since the beginning of the neolithic, this table then is strongly indicative that the maximum brain development was reached at least 20,000 years ago in Europe and perhaps 40,000, and that the greater part of this growth must have occurred very much earlier; and we have seen that early glacial man must have had that brain if he was to survive conditions which wiped out all his larger animal companions. As this table places the pithecanthropus in the mid-pleistocene instead of the pliocene, the number of generations from it to neolithic man can be so enormously increased that the subsequent 2000 generations, from 40,000 years ago to the present, are a mere nothing in comparison. Now that the plunge has been taken and biologists and geologists have become accustomed to thinking of vast periods of time, the paleontologists are constantly lengthening their estimates of the time necessary for the transmutation of species by natural selection, but even if they do lengthen out these generations still further it will not alter the general trend of the diagrammatic curve we have drawn of the development of brain (Chart II) nor change that wonderful shoot upwards in the glacial times.

EVIDENCE FROM ASTRONOMY.

All estimates of the human eras we have given also agree quite well with the latest estimates of the glacial period from calculations of the eccentricity of the earth's orbit as given below in the table.

Years ago.	Eccentricity.
260,000.....	Less than now.
250,000.....	Same as now.
200,000.....	3 times the present.
150,000.....	1½ times the present.
100,000.....	2½ times the present.
80,000.....	2 times the present.
60,000.....	Period began to end.
30,000.....	Considered as the end.

The cold of course lasted long after the greatest eccentricity just as winter lasts long after the solstice, and the glacial is still said to exist in the north and in the highlands. The table also shows that the period "came on with extreme slowness and departed with comparative suddenness" (P. F. Kendell, p. 141, Wright's *Man and Glacial Period*), the very conditions necessary for brain evolution and then a sudden flaring up of civilization. If the glacial age had come rapidly it would have caused extinction of man's ancestor, not an evolution requiring very slow changes of environment.

EVIDENCE FROM CRANIOLOGY.

From a craniological study of primitive European man, as far back as we can reach, we obtain evidence of the culmination of brain growth during the late glacial. The general trend of opinion is to the effect that all the European long heads of pre-history are autochthonous and are not different immigrant races as once thought, and there is now but little doubt that successive higher and higher types followed each other in evolutionary series from the lowest to the highest—Cannstadt, Neanderthal, man of Spy, etc., to the Neolithic Cro-Magnon. The latter type is still in existence and some of the other earlier forms are better than some of those of modern Europeans,

showing a very early brain development. The Cro-Magnon is even larger than present skulls (Dumont). In Great Britain in particular, the earliest men were among the most dolichocephalic in the world, like negroes and Eskimos, and living in the late glacial so far north they may have existed as Eskimos. They are now believed to be the ancestors of the much higher, long-headed, long barrow race. The latest types are among the Furfooz race. It contains a few broad heads, probable fore-runners of that broad-headed Asiatic invasion of larger and fiercer men, traced so well by Ripley and others. This invasion began in neolithic times, antedating bronze but very little; and though it may have entered Europe before 5000 B. C., it did not spread to England until about 1000 B. C., constituting the round barrow race. Though it spread almost as widely as its short, frail predecessor it did not enter Ireland nor leave much of a trace in Spain. It surely divided the aborigines into two masses north and south. Its home in Asia may thus have been for a while at least, a far better environment than Europe for human evolution. Perhaps it was a western expansion of the same races which at the same time overran Mesopotamia from the teeming area north of Persia, all of the same stock as the Akkads, Chinese, Hittites and native Persians.

The two primitive related long-headed stocks—Teutonic and Mediterranean—being autochthonous and better adjusted to the environment than the intruders, have therefore survived in greater numbers than the intruders, who have been gradually forced into the highlands and infertile regions where we find them to-day. In addition to this, the northern half were thus forced to keep in a severe environment undergoing natural selection in brain development, longer than any other race on earth, and are now the type of the rulers of the world. They furnish the blood of most of the noble and royal families of Europe even in southern places where they are undoubted conquerors and where their soldiers have all died out and they are totally different from their subjects.⁵ Even the possession of

⁵ Dumont (*Civilization et Dépopulation*) mentions the fact that as early as Cæsar's times the blondes had become the aristocrats. Vercingetorix was blonde and his soldiers short broad heads. Even in more

bronze did not preserve the broad heads, for they were forced into unoccupied places, where they founded lake dwellings just as the long heads had done in other places millenniums before them. The later broad head invaders, except such irruptions as those of the Huns under Attila, never got beyond eastern Europe where they are the main part of the people, merging into the pure Mongolian type. As we recede from the central ridge of Europe the less and less do we find of this late intruder.⁶

EVIDENCE FROM EARLY CULTURE.

A study of early European culture is also confirmatory of the origin of a large brain in Europe at a very early time. Ripley

remote times still, there are evidences that the blondes were rulers from the Peloponnesus to Ireland. Tradition states they conquered short brunettes in Ireland, in Scandinavia the nobles were blonde, the serfs brunette. In Greece and Thrace the Pelasgians were brunettes conquered by blondes, and the same may be said of Gaul.

"The craniological evidence that early skulls were once uniform, and later became varied, is universal. Dumont mentions it. Topinard says that "in a pure race all the individuals resemble each other as regards their main features." "M. Broca has in his laboratory five skulls of Patagonians which are identical." "We are told that the Andomans and Todas are all alike." He also says, of 22 photographs of Andomans, "the heads appear as if cast in the same mould," and that Eskimo skulls are almost exactly alike. Mr. Owen remarks upon the wonderful resemblance among 96 negro skulls of the Gaboon.

Topinard shows the enormous variations of modern brains as follows:

Causes.	Variations in per cent of total weight.
Sex	10.
Age	4.
Height	4.
Mental Disease	4-5.
Idiocy	18.
Last Illness	10.
Intelligence	20.

Morton's tables do not help us, as they contain mixed types of savage and civilized, but the following is significant of the variations due to civilization.

Races.	mean.	Skull Capacity.		diff.
		max.	min.	
Savage, Australians	75	83	68	15
Civilized, Peruvians	75	101	58	47
Savage, Polynesians	83	84	82	2
Civilized, Chinese	82	91	70	21

calls attention (*The Origin of European Culture*) to the undoubted fact that a neolithic culture sprang up in western and southern Europe and from the Alps to Scandinavia steadily and uninterruptedly from a lower state and totally independent of Asian and African aid, even inventing a system of writing. There was no hiatus between it and the paleolithic. It was not much later than Akkadian culture, only a delay due to the cold and the severity of the struggle for life. Asian culture went further at first because the people had leisure and could crowd together more in their fertile valleys. European bronze and iron culture do not betray oriental affinities until 1000 B. C. Schliemann's excavations show early Greek civilizations advancing in regular evolution but little previous to those of northern Europe, and not showing Egyptian influences until about 1500 B. C. The Swiss pile dwellings also show an uninterrupted advance from the stone through bronze and iron ages, the broad-headed intruders from Asia appearing here and there after the foundation of the earlier towns. The beginnings of these towns are at all ages from 5000 to 1000 B. C., the earliest being founded by the long heads and the later by the broad heads. The earliest beginnings of the autochthonous long heads were self-civilizations and far enough advanced to abandon a nomad life even in the Alps at 5000 B. C. No one can pretend to apply rules of origin of culture and of the men themselves to all the varieties and crosses of European man, until the ethnologists have untangled the mixture of types and determined where each variety really did arise. Nevertheless it is clear that to originate this high culture in the thinly settled inhospitable north so very little later than the southern form in its thickly settled communities, shows that the northern men must have had larger brains than the first southern civilized man.

EVIDENCE FROM HUMAN ONTOGENY.

From human ontogeny we get remarkably clear evidence of the early phylogenetic development of brain. Donaldson says (*The Growth of the Brain*) that the number of brain cells is complete at the end of the third month of foetal life, and that subsequently the individual cells increase in size a long time, in

some men even as long as until the 40th year of age, but no matter how long his brain may increase in power as a man grows up, he has not one single brain cell more than he had six months before he was born. Could evidence be clearer that he was an intelligent animal at a very remote period, even after making great deductions for that biogenic law of "the relegation of the final characters to earlier and earlier ontogenetic stages in the course of phylogeny?" (Weismann). We know of course that man did not acquire a large brain until after he had acquired a large body, yet the development in a four-months' foetus of all the brain cells it is to use throughout life must mean that man developed his brain phylogenetically a long time before he put it to useful work of making that geologically recent thing—civilization.⁷

No amount of function can increase the number of the brain cells, for it is as impossible as increasing the number of our legs by running. This is positive proof, that evolution of brain occurred by the selection of the greater variations and not by functioning of brains placed in a severe environment. Ontogeny then shows that an easy tropical existence is incapable of originating man.

There are three generalizations which are now universally received. First, that a man in his development to full maturity

⁷ It is rarely appreciated that the real thinking part of the brain is of very little bulk and could easily be packed away in such a little space as a 3-months' foetal skull. Donaldson says that the three billions of nerve cells are each 700 μ^3 in bulk, and a calculation will show that they "could easily be placed in 2.25 cu. cm.," and this is a mere thimbleful. If the immature foetal brain cells are of 1/10 the diameter of the adult size, then they have 1/1000 the bulk, or all the brain cells which a thousand three-months' foetuses are to use throughout life, could be put into a thimble. One-fourth of the brain is composed of supporting frame work, blood-vessels, etc., and 90 per cent of the remaining 1200 cc. consists of fibres, while only 10 per cent or 120 cc. consists of gray matter. If only 2.25 cc. of this is cells, then there is a bulk of 117 cc. of the protoplasmic processes connecting cells together for coordination, and this is the real excellence of the human brain. Ramón y Cajal shows that there are scarcely any of these fibrillae in lower animals like frogs, and a progressive increase in number as we go higher, until we reach the enormous number in adult man. The early foetus likewise has none, and they grow out for a long time after birth.

passes through stages corresponding to the adult stage of prior less developed ancestors. Second, that savages closely resemble prior adult stages of civilized races. Third, and a corollary from these two, civilized children in their mental sphere very closely resemble present savages and prior adult ancestors. From these it is evident that all savages being in a condition of arrested development, must be branches which have migrated out of the environment which was causing higher evolution of brain.

Phylogenetic development is a very wobbly one since we cannot doubt that the environment was not necessarily such as to cause the evolution of forms in a straight series. Hence forms must have occurred out of line and it is a matter of economy for the foetus to skip them or make short cuts. Thus in the early stages of foetal life it is impossible to see traces of many a previous ancestral form, but late discarded characters are preserved more clearly the more recent they are. The useless lanugo or soft wool on the foetal body does not drop off until just before birth and sometimes not until some weeks after birth. That is, man was a highly intelligent being long ages before his body hair disappeared from the wearing of clothing during glacial times, there being a survival of the least hairy as the better adjusted to exist in rapid changes of temperature from the intense heat of a short tropical summer to the cold of a long winter when artificial clothing could be obtained.*

*I have never seen a logical explanation of the reasons for the disappearance of man's body hair. There could be no acquired character here to transmit and we doubt whether it ever could be transmitted. In the tremendous destruction of human life always going on, any tiny congenital variation must have been of great assistance or hindrance. The least hairy men must surely have been better able to stand the terribly hot summers and survive in greater numbers and transmit this variation to their offspring. In the winter they sought protection of caves and clothing and were put to no disadvantage. A continuous cold could not have caused this involution, nor continuous warmth, and it is a strong evidence for the evolution of man in glacial times. The earliest escapes from the north have retained their hair because the involution ceased—Ainos, Australians, Tasmanians, and Todas. Involution of the scalp hair did not take place, as the protection was an advantage, summer and winter, but when houses became warm it was an advantage to have little hair in the house and baldness began. In the hot habitations of modern life, there would be more deaths of those

Perhaps man attained to great intelligence before he reached his present stature, for at six years of age the brain has reached 9/10 of its adult size, and has nearly completed its growth at 9, a slight increase going on until 35 or even to 40, and at birth its proportional weight is the greatest. Now we know that the changes we see in man as he grows from infancy are precisely the changes we see as we pass from reasoning animals to savage man, barbarous and then semi-civilized man, but his full adjustment to modern civilized life does not occur until long after 21, generally not until 30 or even 35, and in a few men not until 40. During all this time, unless abnormally precocious, he closely resembles in his aspirations, desires, and actions, the full adult of some lower stage of culture, just as tales of Indian strife are so fascinating to boys. The lower we go among the races the sooner do the children mature mentally, so that in the savage we find boys of 18 who are fully matured adults. We can then conclude that a little growth of the size of brain cells and their connections but not of their number, may have taken place since man was savage but that as soon as division of mental labor occurred all cellular increase stopped. The long period from 9 years of age until 35, with but little or no skull increase is the ontogenetic equivalent of the long phylogenetic interval between mesolithic man to the modern Teuton with its little or no increase in skull capacity.

The skull of the man of Spy is very good in shape and considerably larger than many modern skulls, and yet the body is decidedly simian and this is just the condition of the bodily conformation of infants—simian long after a huge brain development. Until long after he was a highly intelligent animal, man must have had a daily struggle for food, and this habit of carrying everything to the mouth when in a state of constant hunger still persists as a perfectly useless habit in every infant. Indeed the evidence of early development of intelligence can

with much hair, and an increase therefore of baldness, were it not for the use of shears which have thus stopped the evolution of baldness by natural selection. Baldheaded men are better fitted for the changes of modern life just as hairless man were better fitted for the changes of glacial times.

be seen in so many of the ontogenetic stages that it would be tiresome to go further into details.

EVIDENCE FROM LANGUAGE.

Language is a very late phylogenetic acquirement for it is put on and off by races with comparative ease and, until fixed by writing recently, it was undergoing rapid evolution, and it has often been suggested that glacial man, though very intelligent, may not have had articulate speech. Children do not learn a language until after the brain is quite well advanced and their process of learning is nearly the same as that by which man evolved it. First there are cries, then imitative sounds for nouns, then after a long time verbs, and then the adjuncts. It is several years before adverbs and the more intricate parts of speech are comprehended. This corresponds to the fact that man did not need language until very late after he began to cluster into groups, for at first populations were extremely thin. Denmark could not support 500 savages of the stage of the lowest living man. Hence man talked only after his maximum brain development was well-nigh complete. The most archaic Aryan languages had words for abstract ideas which are very late in appearing and are not found among many existing savages. Finally the various classes of languages have absolutely nothing in common, showing that their origins are widely separated and occurred long after speechless brainy man spread over the earth. The general trend of opinion among comparative philologists is to abandon Max Muller's idea of an Asiatic Aryan origin and for very many reasons to place the primitive Aryan among the long heads in Europe between the 40th and 60th degrees of lat., long anterior to the Celto-Slavic invasion. These Aryan speaking invaders of the south of Europe are said to have died out as the migration was too rapid, the present population being survivors of earlier immigrants from the north. The comparatively recent invaders (Aryan) of Asia are also said to have become extinct in Persia and nearly so in India, where they arrived before 1000 B. C., probably by a southern route as the Macedonians did later, the northern route always being taken by the Asiatics going west. Asiatics indeed could not

have had sufficient brain to make such a language, for the language a race evolves is in strict relation to the brain development, the lowest savages having the worst, and when their knowledge increased, their poverty in words was overcome by making each word do many things by inflections. The longer a brainy race remains in a savage state before its language is fixed by writing, the higher is the evolution of the language. Thus late languages are simplified by the invention of more words and the omission of cumbrous inflections, and replace previous languages. The last of all, English, is driving out all others. Similarly the brainiest and most delayed of men, who developed the best and most delayed of languages, are ruling the earth—the Teutons.*

* *Language and Race*.—In reading over works upon human origins, it is astounding how much, which is now puzzling, is made clear by accepting a northern origin and a slow oozing migration for survivors and extinction following rapid migration. The matter is too enormous to do more than refer to here. In like manner such works as W. D. Whitney's "Life and Growth of Language" and André Lefèvre's "Race and Language," are illumined to a wonderful extent by such conceptions. The latter works—by the way—give such clear testimony as to our theories that a synopsis of a few points may be advantageous.

Though brain evolution may precede language evolution so that high civilizations may exist as in Egypt with inferior means of expression, yet both evolutions have gone on step by step together. After leaving the simian stage with its few sounds or clicks, the earliest man used imitative sounds for nouns and the first stage began, *i. e.* the *monosyllabic*. Until enough words were invented man depended to a large extent upon gestures. Some of the lowest races are even yet in that stage where gestures are necessary to explain words and they cannot converse in the dark. Later, among higher men needing more words and unable to invent them, the monosyllables were glued together for the purpose and the *agglutinative* language arose. The slurring of these additions gave rise to the *inflected languages*, and the highest races, by dropping all useless inflections, originated the *analytic* languages of which English is the most advanced. Races whose brain development is checked by migration cannot evolve a high language, nor can those checked by civilization as the Chinese, and the longer a brainy race remains savage in the north, the higher is its language. This evolution is in a geometric proportion as every other invention of man, and is very rapid at the end, so that the most of the advance in English has been since 800 A. D. and not fixed until within two centuries. Le-

EVIDENCE FROM ANATOMY.

There is so much nonsense written about the intelligence being independent of the size of the brain, that it is really necessary to digress at this point to call attention to the fact that intelligence strictly depends upon brain weight. The brain cells are the organs of thought and the more there are of them, other conditions being equal, the more thoughts can be produced. We are perfectly safe in the long run, in judging intelligence by the size of the skull. Donaldson shows that the brains of eminent men are the heaviest and their skulls the most capacious, though, we know little of the brain weight and cranial capacity of men successful in business and professional life. In excep-

tion states that savages may wear out a language in fifty years so as to make it unrecognizable. In some savage tribes children cannot understand the grandparents. Thus a great diversity of languages in America is meaningless as a measure of time, for their origin. All other evidence points to rather late arrival, the "mounds" are recent, and there has not been time for much change in type or color.

Agglutinative languages as a rule are found in the lowest races of America, Africa, Oceanica, and Asia (Mongolian, Uralo-Altaic, Dravidian and Malay). Coptic and Berber groups have not progressed since the Pharaohs, remaining "suspended between agglutinative and inflection." Higher still are the Semitic languages with internal inflections really due to slow agglutination (Assyrian, Phoenician, Hebrew and Arab) and in accordance with their later arrival from the north. The external inflections of the Aryan show a separate origin, and upon their arrival they displaced Semites on every shore of the Mediterranean, and spread to India. The long stay of Semites has led to the belief that they were a Mediterranean race and not a northern one. The Hebrews who have returned north to their original European homes have prospered while others have not.

Separate origin is hinted at by the fact that the long-headed Australians and Tasmanians use suffixed particles while the neighboring broad-headed Polynesians used prefixed ones like the Dravidian tongues of India. Likewise the lower Guinea negroes use suffixes while the higher Kaffirs use prefixes. The clicks of the Hottentots and Bushmen are truly simian. The Eskimo's Asiatic origin is shown by the relationship of its language through *Aleoute* and *Tchoukche* to the Samoyed or Uralo-Altaic group of North Asia.

Whitney points out the low character of the languages of the lower races of South America, and the exceedingly high and beautiful language of the brainy agricultural Algonquins.

tional cases there are other things in the skull besides nerve tissue as we will subsequently more fully explain, and these easily explained cases are foolishly quoted as in some way proving that intelligence has nothing to do with the size of the brain. The real condition which marks off the human brain from all others is the wonderful intricacy of the system of fibres connecting its component parts, as before explained. In exceptional cases it is possible for these also to so vary that a small brain may be so well organized as to be more efficient than a

Lefèvre gives a wonderful collection of facts showing the condition of the unseparated Aryans, all of which can be best explained by a northern cold origin. It ends with this sentence, p. 259, "*but since they came late in time and with an already developed language and intelligence, they rapidly reaped the benefit of the inventions of their predecessors.*" And all this from a man who tries to show the western trend of Aryans instead of that to the South and East for 4000 years.

The great eclipse of Egyptian civilization between the 6th and 11th dynasties, may have been due to brainier barbarous invasions, for the renewal of civilization with everything new, even to the religion, writing, titles and names, was barbarous, coarse and rude; yet it culminated in the 12th dynasty into the greatest and most glorious period of Egyptian history. It was like the temporary eclipse of Southern Europe in our dark ages from northern barbarous invaders. In both cases a new civilization bloomed higher than the last, and then declined with the dying out of the unacclimatized new invading blood. In Egypt this "Middle Empire" was so feeble as to be overcome by an historical invasion of savage Semitic Hyksos or Shepherd Kings 2000 B. C., brainier than the surviving natives of the decrepit Empire. These invaders even included dark Hittites of Turanian stock from the cold north represented heavily clad and with Chinese types of faces as in two of the later kings of this line. This invasion of northerners can be likened to the present or rather modern invasion of southern Europe by northern types. The brainy northern Hyksos adopted the civilization they found and became true Pharaohs, just as the brainy savage northern Tartars after conquering the Chinese, became true civilized Chinamen.

John Fiske in a recent article (*The Atlantic*) states that in the time of Charles I., only five millions of people talked the language of Shakespeare, a century ago it was twelve millions, one-third of whom were in the United States, to-day there are more than 120 millions, three-fifths of them in the United States. He gives it as one proof of Anglo-Saxon domination, but he is here mistaken, for only a small percentage of English people are of Anglo-Saxon blood. The facts illustrate an invariable law that inferior languages melt away in contact with higher ones, and the highest of all—English—will eventually replace all others.

larger brain less intricately bound together with connecting fibres. Whether modern small brains are composed of better material or are better organized so as to be more efficient than larger prehistoric brains is also a possibility, but it is highly improbable as there is no evidence of it from a study of the large modern savage brain which so far as we know is just as well organized and has just as good substance per square inch of cortex and just as much cortex per cubic inch of skull as in the average civilized brain. The smaller modern brain is merely specialized—efficient but of limited range. Its possessor may be great in his specialty but a fool in other matters.

As the cells are on the cortex or surface, and as the cortex varies in thickness but very little in the normal and healthy, it follows that the greater the number of cells, the greater is the surface of the brain and the more it must be doubled up or convoluted. Goll long ago showed the relation between intelligence and increasing number of convolutions, and Rudolph Wagner, in 1860, showed that eminent men had more richly convoluted brains than the average. The brains of such men as Kant and Schopenhauer were not only richly convoluted but very heavy and their skulls proportionately large. It is also an invariable law that the average brain increases in complexity as it increases in bulk. The lower we go in the scale of human intelligence from the highest to the Bushmen, the simpler and less numerous are the convolutions and the smoother and more simian are the brains. Increased complexity is merely the path of least resistance, the only way of tucking more brain into a skull without the latter becoming impracticably large—a mere matter of selection or rather of economy. A marked degree of intelligence is then impossible without a large head and we can rest assured that the post-mortem examination will reveal a richly convoluted brain.

There is rapidly increasing evidence that the remarkable variation of human brains we have already mentioned as following biological laws, and the increasing number of smaller sizes, really mean specialization. This class of brain has not been recognized as of limited range though the possessors may have been noted specialists, and they have also given rise to very absurd statements that intelligence was totally independent of

the size of the brain. The variations in the anatomy of the brain are so great that the convolutions but a short while ago were believed to be jumbled together without plan, and it is only within the last few decades that the general plan has been made out and the various fissures and convolutions accurately defined and named. That this variety means specialization has been pointed out a long time. Edinger's *Anatomy of the nervous system* shows that special ability as in certain great men, commanders, business men, etc., is not due so much to big brains as to the development of special parts. An editorial in the *Jour. Amer. Med. Assn.*, Aug. 19, 1899, says, "Many brains have been studied from this standpoint, and to a remarkable degree there has been observed a constant increase in size and weight of special parts that bear a relationship to the kind of superior intelligence manifested. Great artists, for example, in whom the visual imagination is highly developed, have been found to show a corresponding increase beyond the average in size and weight of the representative visual centre in the occipital lobe. . . . In a newer but somewhat different sense, brain weight, including brain development with convolutional and cellular increase, is shown to be more or less of an index of intelligence." So we can accept as a proved fact that human brains in civilization are already specialized in accordance with the law of the great variation of parts developed to a great degree as compared with the same part in allied species.¹⁰

It cannot be expected that anatomical evidence of specialization should be either extensive or accurate at present, because we know so little of the localization of the brain functions. We

¹⁰ It is evident that the brain reached its highest evolution in weight many thousands of years before man showed any of those higher intellectual qualities now so characteristic. The brain was developed to assist survival if we may thus state the method of selection, and it is quite likely that there are no centres of these higher intellectual functions—certainly modern research has never found centres for morality, religious feeling, abstract reasoning, etc., and possibly never will. These higher intellectual qualities are believed to be the result of the action of the whole brain. It is additional evidence that the brain arose from the survival of the larger variations in an environment like the glacial when there was need of an excess of the preexisting brain centres found in the anthropoids.

know the position of the motor areas, and the centres for speech, and that sight is located behind in the occipital lobe and that smell and hearing are below in the temporal lobe. Beyond this very little is known in detail and absolutely nothing is known of the alleged parts of the brain presiding over the highest intellectual faculties. But from what we do know we certainly get splendid evidence that specialization of brain causes specialization in mental functions. Gambetta, for instance, one of the greatest of French orators, had the speech centres wonderfully convoluted, so that he had more than twice the machinery for remembering and speaking words than the average man. The rest of his brain was very small, sub-microcephalic, but he gives no evidence of having used more than his specially developed parts, for his judgments were notoriously defective. He was a talker because he was born with the tools to talk with, and he did not develop the tools because he talked, and he had no other tools like those of the big-headed Bismarck. Indeed Gambetta was an oratorical fool, like many a noisy American we all know. The great painter who was asked what he mixed his paints with, was correct in replying—"Brains," for without brains the sense of color alone is as useless as Gambetta's speech sense.

We then have very clear scientific explanations for the following facts: Pre-Columbian skulls from Illinois measure 24 ins. around (25 or 25½ in life), while the average specialized New Yorker's is only 22½ in life. The well-formed Engis skull is larger than the average European skull in height, width of forehead and capacity, 97 cu. ins., according to Dr. Simms. The skulls of Swiss lake dwellers are larger in every way than those of modern Swiss. Skulls from the catacombs of Paris are 21½ ins. around, about an inch more than that of modern Parisians; and those from Pompeii are larger than the skulls of modern Romans. Among small modern skulls may be mentioned that of St. Mausuy, Apostle of Belgic Gaul and later Bishop of Toul in Lorraine, Robert Bruce's and that of a Danish gentleman of the 17th century mentioned by De Quatrefages. These all are of the Neanderthal type, and they show that great abilities in theology, war, or business or specialties, do not require large skulls and also that the Neanderthal men were a highly intelligent race.

EVIDENCE OF SPECIALIZATION IN MODERN LIFE.

At present we seem to be surrounded with the evidences of the modern evolution of small specialized brains limited in usefulness to a very small sphere. One of the best teachers I ever had was of this type with a sub-microcephalic skull which could not possibly have contained more than 40 ounces of brain. He had a limited subject and taught only its rudiments, and though he never rose to great heights, in his limited sphere he was magnificent. His death did not cause a ripple on the ocean of humanity. My worst teacher on the other hand was probably the brainiest in the general meaning of that term. He was far from being a specialist. Since the curriculum of the university has become subdivided the more often do we find magnificent teachers in a limited field who are nonentities in all else.

Without a paying specialty, the modern brainy man may be in actual want, while an imbecile with a special knack may make millions to be squandered by his nephews, for such men are not apt to have children. Thus an employe of an opera company was paid over five thousand dollars a year and he could scarcely write his name. Though densely ignorant he was a hail-fellow-well-met, with a railroad sense, if such an expression is allowable. He could get special terms for transporting his company, where other agents failed and he saved his company many thousands of dollars annually. A one-sided artist doing one thing may be highly paid and the philosopher may live in a garret. Thus the ability to make a good living—to survive in the modern struggle—has nothing to do with general intelligence but with special intelligence.

Every college in the world except the national ones at Annapolis and West Point, recognizes the fact that no two men are alike, and courses of instruction are constantly being specialized instead of fitting every shape into the same mould. Now they are training what brain there is, and not attempting to train a part which may not exist. One of our best types of specialized mind, Henry Ward Beecher, found the curriculum in his day, so completely unfitted for him that he had to neglect it; the mould was too narrow. On account of this lack of adjustment to the curriculum, it is the commonest thing to find

that a very large percentage of successful men were anything but shining lights at school. Corporations find the most extreme difficulty in securing the men for their special positions and when they do hit upon the right man, others offer such higher salaries that they are compelled to pay enormous salaries to retain their men. Perhaps we can also see why Washington should be so great, in spite of the fact that he was so little of a specialist in all other affairs that his contemporaries voted him stupid. He had reasoning faculties which made him the man for an environment which few could fill, and he succeeded where other more brilliant, narrower men would have failed. Indeed a modern army is a mass of specialists and the greatest difficulty is experienced in finding the right men for the right places, those succeeding in the lower ranks being often horrible failures in command, and men great at the top being sometimes the most complete failures in the lower positions, as were Grant and Napoleon. The logical faculty of reasoning may be highly developed in a small brain and its possessor be a very great man. This type of man is often unable to take any special part in the orchestration of civilization, but as leaders to direct and harmonize the efforts of other specialists they may be superb.

We all know plodding successful specialists of extremely limited mental horizon, scientific investigators too narrow to interpret their own results and discoveries, orators unable to write or even spell, George Combe and Dr. Gall with as little idea of numbers as an American aboriginal, mathematicians who are unable to talk, statesmen, like Webster, without business sense, but men ignorant of the existence of Shakespeare yet possessed of executive ability enabling them to manage vast affairs, while men noted in other respects may be so devoid of executive ability as to bungle every thing they attempt to manage. Practically we have every possible grade between degenerate imbeciles like Blind Tom, with but one developed faculty, and those having many faculties developed, the equally impracticable "Admirable Crichtons." With such normal variations in intelligence we cannot possibly get a unit of measure to judge men, for in civilization the word has become an indefinite immeasurable term.

The work of modern life—this “harmonious orchestration”—then, is accomplished by specialists, many of whom are so one-sided that they would have perished in a savage life. The average brain weight of these can well be markedly less than that of their savage ancestors as we have shown previously. But few people have the least conception of the low state of intelligence of the average civilized man in every nation due to this survival of the least intelligent. They are eclipsed by the more numerous variations. Lombroso quotes Scarfoglio as saying, “A good fifth of the people of Italy are still living in a savage state, dwelling in cabins that the Papuans would not live in, accommodating themselves to a food that the Shillooks would refuse, having a vision and an idea of the world not much more ample than that of the Kaffirs, and running over the land desiring and seeking servitude.” This is an extreme case, for the average man improves as we go north in Europe in direct proportion to that progressive increase of average brain we have noted.

The specialization of modern brains explains many a psychological paradox, for we are frequently astounded at the illogical beliefs of renowned men, who thus frequently ruin the work of a lifetime. When sick they are often a veritable harvest for all kinds of quacks and illogical treatments, just as Harold Frederick believed in Christian Science to his own undoing. Maudsley has called attention to the fact that few men really reason, only repeating parrot-like what they hear. Mr. Depew is credited with the amusing observation that it is generally possible to tell from a man's conversation what paper he reads, for the average man is often heard repeating the morning editorial. In the case of civilized man we have seen how impossible it may be for a man to reason outside of his own sphere. In such things as house-building he may depend on the architect, but in deciding whether vaccination is a delusion he acts for himself. Men of intelligence will carry a potato or wear an iron ring to ward off rheumatism. Wallace believed in spiritualism even after his proofs were shown to be fraudulent, and Eliot Coues is said to have believed in the reality of his ghostly visual hallucinations. Men who, like Gambetta, can talk, seem to flock to political life where more or less oratory is generally an essen-

tial. The more intelligent become statesmen but the smaller fry may be mere talking fools and their speeches nauseatingly illogical. Dr. Andrew D. White's "Warfare of Religion and Science" is a long series of the illogical actions of theologians similar to our own burning of witches. Wilberforce in his absurd fight against evolution is the type of these men, brilliant in one way but fools in many others. Every now and then we see articles calling attention to the survival of ancient and mediaeval superstitions and credulities, and we can rest assured that though such absurdities may be just as numerous as ever and may never disappear, yet they are becoming less and less harmful from the fact that men borrow ideas and unconsciously follow the lead of the better thinkers on whom they are dependent in modern organized society. The life of new absurdities is thus growing shorter, some, like the "gold cure" for drunkenness and "free-silver" for political ills, being very evanescent.

EVIDENCE OF INCREASE OF SPECIALIZATION IN OLDER CIVILIZATIONS.

The gradual increase of brain variation in nations long under civilization explains another peculiarity which has been so often noted. No matter how low the average Southern European brain weight may be, there may be as many men of great skull capacity as in "newer" nations of much larger average. Though a great mass of the Italians may be steeped in savagery, that people now supplies many modern men of great ability. Furthermore old nations having a longer time to accentuate specialism by in-and-in breeding supply most of the great artists. American musicians are generally foreign born, and great actors are rarely native to America nor are the great painters, but the further south we go in Europe the more of these specialists do we find and fewer of those big types of men like Nansen.¹¹

¹¹ Jonathan Hutchison in an essay on "Genius" (*Arch. of Surgery*, 1900), suggests that possibly genius never arises in races recently civilized. He mentions that certain districts in England, noted as the birth-place of many men of genius, probably have the remains of the old Roman population. By genius is here probably meant the normal variations producing great special ability.

The Jews are an extreme type of the survival of specialists for they have during 14 centuries been subjected to a more powerful natural selection in this direction than other races. After the Aryan accepted Christianity a persecution of the Jew began and has continued with unremitting fury. Thus placed in an unfriendly environment, his struggle for existence has been so intense that his nervous system has had more than it could stand, and he now furnishes a larger percentage of insanity, neurasthenia and other nervous diseases than any other race. Stunted in growth by bad food and bad living, compelled to flock to the Ghettos of the cities, and barred from outdoor employments until now unfitted for muscular labor, there must have been a tremendous mortality of those of less vitality, for they are the longest lived race in the world, and they can engage in the most deadly of trades—tailoring—and yet they are remarkably free from pneumonia and consumption. The terrible mortality in this weeding-out process is shown by the fact that their number is not nearly what it should be by a normal increase and their increase in a more friendly environment is very great. There must have been a greater survival of those able to take up a specialty and they are consequently more highly specialized than their persecutors, and better adjusted to the modern conditions and are taking the lead in many directions. Though they number less than ten millions, they have long controlled the financial world and have much to do with keeping the peace of Europe. In certain cities they control commerce. In science they have furnished many a great specialist, and in medicine they have been leaders for centuries, and in some of its specialties they have had a monopoly. In specialties of law and literature they are grand and in the specialized arts they may be superb like the De Reskes. The reverse of the picture is not so bright, for having so few men of more general capabilities the modern race furnishes few philosophers, statesmen and military leaders. Many a successful Jewish merchant has a microcephalic head with brain so small that he is almost imbecile except in matters of bargains. The elimination of those with a martial spirit still further benefits them for they are better adjusted to future conditions when wars will be less and less frequent. Maurice Fishberg (N. Y. Med. Jour., April 6, 1901) has elaborated the above points quite extensively.

EVIDENCE THAT MODERN SPECIALISM RESULTS FROM SELECTION
OF VARIATIONS AND NOT OF ACQUIRED MODIFICATIONS.

The tremendous adaptability of man has been fully enlarged upon by many writers, particularly by Dr. G. Archdall Reid ("The Present Evolution of Man"), and it gives rise to the impression that as all of man's mental stock in trade is acquired and not instinctive, we can train any child into any specialty, that is, if we take a negro child soon enough we can train him to be a Michael Angelo or a Gambetta. And this belief in the efficacy of education to make brain is held in spite of the fact that in every institution devoted to the education of the lower races, without a single exception, the curriculum has to be cut down to the mental level of the students. Negroes, for instance, get along famously until they reach the higher mathematics and other subjects requiring abstract reasoning, which are entirely beyond their mental range, and it is a well-known fact that a full-blood negro cannot go through West Point or Annapolis without such assistance as is never given to a white cadet.

We must digress a moment to show that specialism as well as brain weight are the result of the natural selection of congenital variations and not the selection of inherited acquired modifications, a fact which we should accept from the anatomical evidence. In the first place there is no proof that men like Gambetta acquired their oratorical powers, that is, developed their speech centres by oratory. J. C. Nott says that "There is no proof of the theory that the cultivation of the mind or one set of faculties can give expansion or increased size to the brain." In the second place, though congenital variations are transmitted there is not a particle of proof that acquired mental characters are ever transmitted. In spite of the widest acceptance of Weismann's extreme Neo-Darwinism, that is the denial of the transmission of any acquired modifications and the proof that every bit of organic evolution can be explained by the natural selection of congenital or fortuitous variations, there is an almost universal belief among physicians of the transmission by inheritance of acquired diseases and hence of all other modifications. Spencer and other extreme

believers in Lamarck's theories do not apply them to the vegetable world, nor to lower animals, nor to more than a small fraction of the characters of higher animals, while the other theory is universally applicable. We are constantly bombarded with articles on the "Inheritance of Acquired Characters" which assert that the increase of brain is a result of civilization and that the savage by thinking has acquired a big brain. On the contrary we have shown that the maximum average brain must have antedated civilization by many thousands of years. Evolution of brain is now, always has been and always will be a result of the inflexible law of the survival of fittest congenital variations or those best adjusted to an ever changing environment.

A child in its development tends to repeat exactly what its parents did in their development. We do not pretend to explain how or why it does this, but we are sure of it, as a fact, and the stockman is so sure of it that he will pay immense sums for colts before they are born. On account of the infinite variety of influences acting upon the ovum somewhat differently than upon the parents, when they were ova, it is impossible to conceive that the child could be exactly like its parents, hence it is acknowledged that congenital or hereditary variations may have their ultimate origin as acquirements due to the environment, though not the result of use or disuse. Nor is it possible for the child to copy both of its parents, and it is this amphimixis (Weismann) which causes variations, which render the possessor better fitted for survival than his brothers, and these variations as transmitted. The grandchildren vary more or less from their parental type, and their children from them. In this gradual tree-like spreading there is a survival of some lines while the others become extinct.

The mistake has been the assumption, that if a child tends to develop as its parents developed it must necessarily do everything else its parents did, and that all of the parents' acquired modifications, whether the result of use or disuse of parts or from any other cause, must also appear in the child whether it is subjected to the same causes or not. In spite of the fact that scientists the world over have been, for many years searching for instances of the transmission of acquired characters, not one

unchallenged case has been found—every published case being either a repetition of a congenital developmental variation in the parent, or explained on other grounds. To believe in the transmission of acquired modifications leads to all sorts of ridiculous situations, like Lamarck's famous statement that the neck of the giraffe is the result of the stretching of the necks of untold ancestors and not the result of the survival of only those with the longest necks, who could thus get food the best. I copy also the following illustrations: the child of the blacksmith should develop big muscles without special exercise in that direction, children of astronomers should develop astronomical knowledge and not learn it by painful application, and a mania for collecting coins should appear in a posthumous son, the son of a telegraph operator should be an operator too, and all professions would soon be family affairs. Since a large part of a man's mental acquirements may be modifications subsequent to the birth of his children we can see how hopeless it is to prove the transmission of mental modifications.

On the other hand suppose that a man by normal variation from his parents is born with a music sense by better organization of that part of his brain, for we all know that such talents are "born in" men, and every one knows that the children of musicians may so vary as to be more or less musical than their parents, and yet all be more musical than the average man. Suppose the most musical, marry musical women, and we thus have generations following some of whose members are increasingly musical by normal variation. This has happened in the family of Bachs and it is the same process as the development of the race-horse—a selecting of the best developed, and the intensification of the variation and not transmission of acquired modifications. Only a small proportion of them vary so as to be more specialized than the parents, so that they are not all great musicians, nor are all the race-horses great racers. Each child has to acquire its musical knowledge just as painfully as its parents, the only thing it inherits is the ability to do this. So the race-horse must be trained to run races, the only thing it inherits is the capacity for being trained. No amount of training of a horse to race will make it a racer without this innate capacity, nor can we thus make a singer or artist without the innate capacity.

Men argue that if the brain is educated and its possessor thinks more, his brain must enlarge like the blacksmith's arm-muscles, yet there is no more evidence that the exercise of ten brain cells will make them turn into twenty, than there is that the exercise of ten race-horses will make them turn into twenty. This power of increase as far as we know is restricted to the epithelial structures, and blood cells, for there is not a single case known of a man's skull ballooning out to accommodate a brain growing large from use. Indeed we have shown that the number of brain cells is fixed at the end of the 3rd month of foetal life, and is never increased thereafter by exercise—an acquired increase of cells due to function is impossible. Minot (Bost. Med. and Surg. Jour., March 28, 1901) elucidates the law, that cells by specialization invariably forfeit their power of multiplication. The educator is like a horse trainer—one trains the inherited brain cells or innate mental capacity and the other the innate racing capacity. There is then no ground for the belief that the children of educated men must be born with larger brains than their parents, when the fact is that by normal variations they are just as apt to be on the other side, and very frequently are.¹²

The only practicable way for intelligence to increase is exactly the way it increased in pre-historic times, by the brainiest man of one family marrying the brainiest woman of another, and some of their children must of necessity vary so as to be more intelligent than either parent, and by just such lucky marriages do we see great intelligence produced.¹³ As a common thing,

¹² Prof. Arthur Thompson in a lecture on "Heredity" at the R. I. of Great Britain, notes the tendency of the sons of great men to revert to the average and be more nearly normal than the parents. He shows that inheritance comes from innumerable ancestors, in the 10th generation back there are 1024 tenth great-grandparents, and he says, "it is the heavy weight of this mediocre ancestry which causes the son of an exceptional father to regress towards the general population mean." It is the old biological law, that offspring from exceptional individuals always tend to the mean. He also shows that the transmission of acquired character has not been proved, and that all heredity is due to transmission of fortuitous variations.

¹³ A recent study of British genius (Havelock Ellis, Pop. Sc. Mo., Feb., 1901) shows this gradual evolution, for certainly 40 per cent of eminent

through some trait we do not understand, sexual selection compels the marriage of intelligent people to very inferior mates and the normal but inferior children are erroneously called degenerate. Education has nothing to do with the matter one way or the other. If universities increased brain and this functional acquirement was transmitted, then university populations should become more and more exclusive—mere family affairs, but it is likely that if we trace the lineage of any educated man or great man, it will soon end in the great class of the normal average uneducated who carry on the species, just as Darwin only a few generations back is traced into the great normal yeomanry. All the universities then have not added one grain to the average of man's brain weight and never will, or they would be living examples of the absurdity of all the laws they themselves teach—the laws thought out by Darwin, Wallace, Brooks, Lankester, Weismann and a host of others.

Similarly by these laws, civilization has not added one grain to man's brain weight or it would be the transmission of acquired modifications. Brain can increase in only one way, when the environment is such that only the brainiest are the best fitted, and that time has long gone by, perhaps 20,000 years ago and even 200,000 for the early emigrants to the tropics. The average can never increase again until the environment becomes a "fool-killer" in every generation. Civilization is not a "fool-killer" as Dr. David Starr Jordan states, but it is a fool saver.

Dr. G. Archdall Reid ("The Present Evolution of Man") has applied all these laws of selection to show how men are by survival becoming more and more immune to disease so that some, like measles, are rarely ever fatal any more, and how we are becoming more and more immune to alcohol by the rapid elimination of the drunkards so that the races knowing alcohol the

men come from parents of decidedly more than average ability. C. W. Super (*ibid.*, Ap., 1901) states the same of the French and Italians. It was this fact that led Galton to his studies of Hereditary Genius. Ellis shows that the upper classes, already separated by intelligence, have built up British greatness and civilization, next to nothing having been contributed by the "teeming masses," or the average—the breeders who carry on the race.

longest are the least drunken, unless we preserve the natural drunkards by prohibition. He might have shown also that the killing of those most susceptible to small-pox has been stopped by vaccination and that our immunity in that direction is checked and epidemics may be just as fatal as ever excepting occasional ones like the last. But the details only interest us here to the extent that they prove the instant check to brain development by civilization.

INVOLUTION ALMOST IMPOSSIBLE.

After migration from the north, brain cannot diminish from partial disuse, for its size is retained by the law of "organic inertia," resulting from the power of heredity. It is explained by Weismann as the persistence of parts and habits long ages after the use for which they were evolved has been changed or has disappeared. Involution is extremely slow as though nature were reluctant to part from that which has been secured at so great expense, and offspring persist in copying parental forms. Hence brain is produced in children generation after generation as a result of this inertia and we now see big brains in some families in spite of the fact that for generations the ancestors have done very little mental work. Involution of the brain by a reversal of the process and the survival of the least intelligent and no others, would take just as long as its evolution—over a half a million of years, and involution by disuse would be as slow as the involution of the appendix vermiformis—hundreds of thousands of generations. Brain persists in spite of partial disuse.

SOME ABNORMAL VARIATIONS ARE DUE TO DEGENERATION.

Throughout this paper we have confined ourselves to normal healthy brains, yet very abnormal or diseased brains may do good work, even magnificent work, both as to quantity and quality, but the possessor be so degenerate as to leave no offspring or leave short-lived defectives. Every discussion of intelligence permits these diseased types to enter—the Byrons, Oscar Wildes, Napoleon, Daniel Webster and Kant—and apparently upset all legitimate conclusions. It is like trying to

find out the characters of the lung by studying pneumonic or tubercular ones. Dr. Simms' article in the *Pop. Sci. Mo.*, Dec., 1898, is full of these degenerates—the results of disease or accidents to the ovum. In normal healthy reproduction the offspring vary but little from the parental type and evolution proceeds by taking advantage of these minute variations. Hence when marked variations, freaks or sports occur it is a result of accident of some kind to the ovum or the result of disease and as a rule the line soon dies out. Now there are normal variations in the nervous system due to certain unknown variations in the character of the substance of the nerve cells, whereby some men are very stable or phlegmatic and others more and more nervous, excitable or unstable. The worst of these neurotics are called degenerates if they have certain physical malformations called stigmata. Now it is a fact that the neurotics are less fitted for reproduction than the more stable, for in them there seem to be more accidents to the ovum and an increase of degeneration from parent to child. The ovum does not confine itself to the developmental groove worn smooth and deep by millions of ancestors but from its very instability is easily pushed into any other path. Degeneration then, like every other variation may start by an acquired modification of the ovum, which also inherits an innate weakness which makes it more and more variable from generation to generation; but if it is not disturbed it may develop properly and frequently does. Yet it may be so feeble as to stop development as a microcephalic imbecile, now bounding ahead unchecked and making a macrocephalic genius, or perhaps bulging out on one side making the specialist like Gambetta or if the rest of the brain is worthless, making the idiots—savants like Blind Tom and the unhappy imbecile mathematical freaks.

As we have seen that great variety of brain development is normal in civilization, and that degeneration may merely intensify these normal variations, it is practically impossible to classify all the cases and to draw a line on one side of which all will be normal and on the other degenerate. There is no doubt of the degeneration of such marked types as the idiots-savants and the insane Charles and Mary Lamb, but the borderland types like Gambetta may be called normal by one psychologist

and decidedly abnormal or degenerate by another. Much as we may regret it, we cannot but conclude that our idols and some of our ideals, the men of genius are too far from the average to be normal variations, and a close examination shows very many to be degenerate.¹⁴ They are like the workers of the ant colony, unfitted for reproduction and generally the end of their line. They have done the most to advance civilization while the more stupid average men have carried on the species developing other men of genius when the family is sufficiently neurotic or the normal conditions are proper, for that some men of genius are normal cannot for a moment be doubted. It is not to be forgotten that the further a man varies from the average in the possession of great intelligence the more likely it is that he is not a normal variation but a result of unstable or degenerate development. But to call every normal variation an evidence of degeneration is arrant nonsense.¹⁵

Degeneration in addition to causing variations in size of brain, may cause the production of other materials in the skull besides the nerve cells, their connections and supporting framework. There may be much connective tissue, fat, water, etc., so that the weight gives us no clue to the intelligence of the man. No wonder then that macrocephalic imbeciles can do nothing with 70 ounces of poor material, but a healthy normal specialist do great things with 40 ounces of well organized material. Nor can the size or shape of the degenerate skull tell us anything of the contents, for there may be a layer of water between the skull and the brain or in the ventricles of the brain. Likewise the cortex itself, so constant in the normal may vary greatly in thickness in the degenerate. While hydrocephalus

¹⁴ See Lombroso's "Man of Genius"; Ellis and Galton above mentioned.

¹⁵ Civilization preserves degenerates who would have perished in pre-historic times; hence the results of degeneration become very marked in the older civilizations, and intensify the normal tendency to the production of great specialists and men of genius, we have noted so often above. All kinds of degenerate specialists, mental freaks or "sports," and psychological curiosities are thus becoming more and more numerous. They do not damage the race, as these lines perish very quickly from sterility.

usually results in serious mental impairment, there are numerous instances where recovery has taken place and the huge skull harbor a useful brain. Indeed it is even believed that such ballooning out of the skull has given chance for actual brain growth by expansion—probably a process of increase in size of the cells but not an increase in their number. Cuvier and Rubinstein were cases of this kind, both having had hydrocephalus and rickets in childhood and both are classed as degenerates.

It is nevertheless true that the size of the normal skull is in fairly close relation to the number of the cells it contains and it is a safe guide to the intelligence of the man whether that intelligence be of a general nature, as with the savage, or of a more special nature, as in civilization. In dealing with large numbers of skulls of a class this rule is safer still, for the variations neutralize each other, particularly among savages whose variations are less marked. The immense amount of work done in measuring skull capacities of various races from which so much was at one time expected and from which so much disappointment has resulted, may yet give us useful averages for very useful deductions as we will subsequently explain.

LESS VARIATIONS IN WOMAN'S BRAIN.

Havelock Ellis ("Man and Woman") gives the results of many investigations showing the greater uniformity of woman's brain and the greater variation in man's, which is in accordance with the law of the greater variation of the males in every species. The causes are so patent that we need not discuss them. Prof. Arthur Thompson (*Knowledge*, Oct., 1899) shows that the differences between men and women are less apparent among savages as we should expect from the greater uniformity of all skulls in savage life. Topinard also shows that though modern woman's skull is 150 to 220 cc. less than man's, the difference in prehistoric skulls (Troglodytes of La Lozère) is only 99.5. A story is told of a Russian professor who evidently did not know these facts nor did he seem to appreciate the fact that a woman's body being smaller required less brain for the motor and sensory purposes. He was a great opponent of female education on account of the small size of the female brain.

It was a very grewsome hilarity brought forth after his death by the discovery that his own brain was less in weight than that of the average of women's. He was probably a specialized savant and capable of being very illogical when out of his mental sphere.

ILLUSTRATIONS FROM SPECIALIZED ANTS.

The ant colony is generally given a high place in the intellectual scale, one writer even placing it but little below man if not his equal, and as the individual brains are microscopic, the natural inference was that actual amount of brain is not of much moment after all. There is a failure to recognize that these huge colonies of dependent specialists are really huge animals in pieces instead of in one bulk as with mammals, and the huge brain instead of being in one mass is in tiny bits, each piece being supplied with legs, etc. If all the tiny bits were collected they would be perhaps as big as that of a higher mammal and in as great a proportion to the body weight as in the highest men. The law of weight and power here works an economy, for as animals increase in size the weight increases as the cube, and the strength as the square or the cross-section, so that land animals much bigger than elephants are mechanically impossible as their weight would break their bones. In the reverse direction the smaller the body the smaller need be the locomotive apparatus in the proportion of the cube root to the square root. Hence the apparatus needed to carry around and nourish these tiny bits of brain of the ant colony is thousands of times less than that needed if it were in one bulk. These tiny specialists emphasize the increasing specialism of man, for we are doing through natural selection exactly what the individual ants have done, becoming specialized parts of a huge intelligent social body which we serve and upon which we are wholly dependent for existence. The sum total of the ant's abilities is in the same relation to the abilities of one member as the sum total of knowledge of civilization exceeds that of any one man.

THE PLACES WHERE BRAIN INCREASED.

The explanation of the observed fact of the increase of brain as we go from the tropics to the north, leads to most fascinating

speculations as to the place of man's origin, which on other considerations is often put in the northern hemisphere. That locality is so reasonable and so in accordance with everything we have stated, that it will be profitable to discuss it from the standpoint that brain evolution must have required a cold climate.

In the first place, as the apes existed in Europe when the climate was hot and disappeared during the pliocene, showing an unfitness to an environment to which brainier creatures could become adjusted by selection, and as the apes have existed in the southern hemisphere with but little change for over two million years, it is quite evident that a hot climate will not cause brain evolution or the ape would have become extinct as in the north. This alone would indicate that tropical men are the descendants of immigrants from the north. Furthermore we know that at the time man arose, no part of the southern hemisphere could have had the proper degree of cold, for while the northern glacial winters were long and severe and the summers hot and short, the conditions were reversed in the south;—very long summers and short winters both milder than the present ones. Irrespective of the glacial times, the tropics have always been hot and could not have had the conditions for man's origin as Darwin and Huxley supposed. The tropics are still further out of the question as they would necessitate a migration to the north and this is contrary to the rule which makes living creatures spread most easily to the direction where the life is not so severe, and as far back as we can trace the human drift has always been southward as it is already becoming in the New World. Brinton's cradle of the race in Northern Africa could only refer to the pre-human ancestor, at a time when there was no cold as an obstacle to northern expansion. It is more reasonable to believe that when the cold came, it found a creature in the north capable of brain evolution, and that the increase of cold was so gradual that when it did culminate, it had already caused sufficient change to permit of survival. It seems as though it were a lucky combination of circumstances at the right time to produce man, just as lucky combinations have been the rule in the evolution of all living

forms. Unless the glacial period had come at that particular time, man would still be in the future. As a side thought it is interesting to apply this to other worlds that have gone through an earth-history. How many of them have had just such a lucky combination to evolve man? According to the doctrine of chances it is hardly likely that more than a very small number of the myriads of cooling globes are or have been inhabited by beings as intelligent as man, even if they had had the peculiar conditions necessary for the generation of living matter from highly complex non-living.

As both Northern Europe and Northern Asia must have possessed the right conditions we can look upon them both as the original brain factories, from which all races have spread southwards. The great Scandinavian glacier ended in a circle parallel to and just north of the 50° of north latitude. South of this ice-sheet in France and Germany, Russia and Asia would then be the earliest homes of man and his places of origin. Man did not arise and spread from a single centre but from wide areas, nor from a single pair but from innumerable pairs.

This is also in accordance with anthropological deductions. Heads are known to preserve their general relations of length to breadth through every vicissitude and the index is so fixed and imperishable that anthropologists use it as the best test for race, and it is the basis of all recent classifications. Sexual selection has no influence in changing the shapes of the skull nor originating new shapes, and there is no known way in which long-headed races can be changed to round-headed or the reverse. Hence there is a general tendency among anthropologists to divide all men into two groups—long-heads and round-heads and their variations. It is certainly an interesting thought that the long-heads arose in northern Europe and the broad-heads in northern Asia and that there was no intercourse between them for millions of years. The long-heads spread south throughout Africa and thence east as far as Australia and just a little beyond "Wallace's line," between Bali and Lombok, separating such widely different flora and fauna. The broad-heads spread east from Asia throughout all the rest of the Pacific east of "Wallace's line," to the western coast of America and

thence throughout America, later, perhaps very recently, spreading westward as far as the east coast of Africa displacing long-heads, just as we know they spread through Europe in the neolithic times.¹⁶

VARIATION FOLLOWED MIGRATION FROM THE NORTH.

Natural selection can account for every variation of the complexion, stature, and hair of the long-headed men, from the blonde, tall Teuton, having wavy hair with oval cross-section, to the short, black, frail men, having wooly or bushy hair with flat cross-section. Natural selection can also explain all types of broad-heads as variations of the yellow, brown or copper skin, oval eyes, broad face, prominent molars, and long black, straight hair with circular cross-section, characteristic of the Mongol. It can also explain changes in the nostril, the flat open nose suitable to the tropics, being unsuitable to the north where it is known to be an element in that tendency of the tropical races to pulmonary congestions.

The Eskimo need not be considered a third type, but a cross for they are wedged between the two primitive stocks. They have extremely long heads as though they were the extreme northwestern expansion of the European type from Great Britain to Greenland and thence to Arctic America and Asia. They may indeed be descendants or relatives of that equally long-headed race, the remote ancestors of even the long barrow race. Yet they are "disharmonic," that is, they have broad faces, and they also have the brown complexion, oval eyes and straight black hair as though they were the extreme northeastern expansion of the Asiatic type, for Topinard states that they formerly

¹⁶ It is interesting to note that the Australians through all their tremendous migration still preserve their skull shape, for it is nearly the same as the most ancient European skulls, the Neanderthal. Geologists believe that formerly there was land connection between Europe and America, via Faroe Islands, Iceland and Greenland, facilitating an early migration of Eskimos who certainly lived as far south as 40°. There was also believed to be land connecting North Asia and North America, facilitating an eastern migration of Asiatics, and Fred. W. Starr states that our Indians still retain Japanese and Chinese characters.

lived in Asia at 40° of north latitude. They are undoubted crosses at the eastern frontier of the Asiatic type just as the similar disharmonic Cro-Magnon (long head and broad face) is looked upon as a cross at the western frontier of the broad-headed invasion of Europe, and just as the Basque is considered as a cross, though it has disharmony of the opposite type, broad head and long face, but here the head is really dolichocephalic for the head is really long but broadened at the temples and the type is really Mediterranean. Topinard (p. 44) states that some Eskimo skulls show evidence of hybridity.

Though natural selection cannot show any way in which one head type can be changed to the other, it is perfectly competent to explain the origin of the two types. Perhaps an animal diet and the accompanying conditions in Asia caused in man's ancestor the evolution of a short, thick-set powerful body with broad neck, face and head as the *necessary mechanical accompaniments*. In Europe, perhaps more of a vegetable diet may have resulted in the selection of a slender frail type with long body, and long neck, face and head as necessary accompaniments. This difference in physique is just what we find in Britain, between the short, frail, long-headed, native, long-barrow race, and the taller more massive, robust, fierce, intruding Asiatic round-barrow race of comparatively recent time.¹⁷

¹⁷ Haeckel states that "the human race is a branch of the catarrhine group, he was developed in the old world, and sprang from apes of this group, which have long been extinct." The new world or platyrrhine group separated from the parent stem a long time anterior to the evolution of the catarrhine group, and did not progress as did the old world forms, or it would have developed into man in the American glacial period. Haeckel also called attention to the fact that the two surviving anthropoids of the western group—chimpanzee and gorilla—are dolichocephalic, while the two survivors of the eastern group—gibbons and orang-otangs—are brachycephalic. Topinard says "many reasons lead to the belief that all the dolichocephales are originally from Europe and Africa and the brachycephalic from Eastern Asia. The low negritoes of India are round heads, and similar early types in Africa are long headed like the Australians. The finding of gibbons (*Pliopithecus*) in the upper miocene of France, does not contradict its eastern origin. The dolichocephalic *Dryopithecus* of middle miocene of France is a lower form than the Gorilla or Chimpanzee and therefore perhaps an ancestor of them.

No matter how the two head forms arose, in each there was a survival of the largest and the two shapes became fixed forever. Arising as a result of mechanical necessity their shape became immaterial, hence variations should become more and more common and marked. Natural selection can also explain changes and variations in the cephalic index of emigrant races, for as a frail body might change in the course of millenniums to one more robust, mechanical laws could make the head less dolichocephalic in many of them, and the reverse process would occur in the other type.

Arising then in the north, there would be a necessary and inevitable migration south as soon as the increasing intelligence reduced the death rate below the birth rate. Such extensive migrations in glacial times are not difficult to understand, for at the same time the mammoth travelled around the world in the northern hemisphere. The earliest emigrants then were the least brainy and their brain increase stopped as soon as they escaped from the north. For instance, the ancestor of the *Pithecanthropus* of Java was one of the first products of the brain factory of the north and could not have been a result of evolution in Java. Higher specimens arrived later and exterminated him. That his remains were in the mid-pleistocene does not mean that he originated then, for his origin may have been a long time previous to this. As time went on, the newer types as they migrated in that everlasting expansion still going on, invariably found earlier lower types in possession, like the Helots and the Canaanites. Topinard mentions numerous traditions of conquering nations finding even ape-like inhabitants. Later still, the brainy savages when they arrived south found that their predecessors had established civilizations and flourished in dense masses.

The widespread story of a deluge must be a modified tradition from glacial times when terrific floods occurred each summer. They must have made such a profound impression as to leave traces in myths long after the migration was forgotten. No wonder also that as language was a late evolution, the earlier emigrants could invent but a crude speech and the longer the brainier races used articulate speech before it became fixed by writing the higher the language became. The very earliest

racess must have migrated long before the body hair fell off as a result of the evolution we have mentioned, so that the Todas, Tasmanians, Ainos of Japan and the pygmies, (Negrittos) may represent types of emigrants from the two stocks who left before the ancestors of any other living races.

Nigrescence may give us a means of measuring the time of a race's migration south. A reasonable explanation of it in the tropics is the fact that it assists heat radiation and in pliocene times it must have been universal. Blondeness actually induces higher temperature and is as useful in the north as it is fatal in the tropics. Hence brunetteness has increased by natural selection in those going south and decreased in those remaining north. The latter have become the tall Teuton and the former the dark Mediterranean type, and those reaching the tropics being the blackest must have undergone this selection the longest and must be among the descendants of the earliest emigrants from the north. We can easily presume 200,000 years to evolve this blackness and this corresponds to about the time the skull capacity of the stay-at-homes should have reached its maximum by evolution in the north. Races going south beyond the tropics could well have produced a lighter color by a reversal of the selection. This is just as slow a process and we can judge that it will take just about 100,000 years to render blondes fit to live in the tropics.¹⁸

¹⁸ There is another reason for the evolution of dark skins in the tropics, for Havelock Ellis states (Pop. Sc. Mo., 1900) that Charcot, Unna, Hammer, Bowles and others have demonstrated that the violet rays of light "have an influence on the human skin which in the first place, at all events, is destructive and harmful in a high degree." Sunburn, snowburn, and snowblindness are thus caused and they can be avoided by excluding violet light with yellow veils or by painting the skin brown. Nature does this in the tropics, and also in the Arctic regions. Blondes are equally out of place in both extremes. Von Schmoedel in a paper before Munich Anthropol. Soc. (see Dr. R. W. Felkin, Jour. Trop. Med. 1900, or N. Y. Med. Jour., Oct. 27, 1900), states that it is only the excessive amount of chemical rays which are harmful and cause exhaustion from increased chemical change. He advocates dark, opaque clothes, and not white which allows the rays to go through and injure the skin. This explains the tendency to wear black clothing in the tropics, for it radiates heat better than white as well as excluding the dangerous light rays.

The broad heads can well be imagined to have been exposed to much light or to have been kept from the severest cold by the geological formation of Asia which until recently was mostly inland seas, and have not evolved the Teutonic bloneness for that reason and as "new-comers" in northwestern Russia they are disappearing before the natives. The European invasion, though much earlier, has mostly disappeared except in the highlands. The Eskimos being of the native stock are lasting longer but even they are geologically recent and no one knows but that they may be destined to extinction. The American Indian is generally believed to be a late expansion and none of them in the north have had anywhere near the 250,000 years to get blonde as

All skin changes are matters of selection of congenital variations and not due to sunburn, for Topinard shows that white races burned dark like the Jews of Africa, invariably have white children. Such acquired characters are no more transmitted than are deformed feet of Chinese women, or deformed heads of savages, or the absence of prepuce in Jews after several hundred generations of circumcision. It is not at all uncommon for children to be born with black hair which turns flaxen within a few months. This atavistic ontogenetic evidence is very strong that man's ancestor was not blonde, but that bloneness is a late evolution.

Actinic rays are fatal to the great majority of pathogenic bacteria, as well as to other forms of protoplasm, and Finsen has been curing all localized superficial skin infections, such as lupus, by concentrated violet and ultra-violet rays. He even cures many superficial cancers (Metzerott, *Nat. Med. Rev.*, Mar., 1901). He showed long ago that these rays do penetrate, and confirmed Witmark's discovery that they and not the heat rays caused sunburn, and that pigmentation in all forms of life is the result of survival of individuals, which can keep out these rays by permanent pigment or temporary pigment-like tanning. W. C. Borden shows that light penetrates so easily the white man's body that it is possible to photograph through it by special apparatus. Light, then, probably is an important item in the modern treatment of tuberculosis. On the other hand, light is so irritating in other infections (variola, varicella, rubeola and scarlatina) that the exclusion of actinic rays by the old method of red light, red curtains, etc., is actually a scientific treatment, and is said to shorten variola, render it mild and prevent supuration and pitting.

On page 29 we have given illustrations showing the southern drift of blonde conquerors whose soldiers died out leaving them the rulers of dark natives—a condition which has existed throughout Europe for several thousand years.

have the Teuton, and those going to South America have had sufficient time to increase their Asiatic brunetness, but not to get black. It may be remarked that from intermixture there are surviving blondes as far south as Sicily and perfect brunettes in the extreme north of Europe.

TIME OF MIGRATION.

The time at which a race left its home in nature's brain factory should be best judged by the average skull capacity, presuming that in both Europe and Asia the increase in brain proceeded at about the same rate. Of course nothing exact can be expected as conditions may have combined occasionally to cause an increase in brain long after migration, as was the case with the northern American Indians on the eastern and the Celto-Slav on the western extreme of the Asiatic type, and there has undoubtedly been a ceaseless crossing of the brainy new-comers with the less brainy people they find occupying the southern lands. This may not have been so very marked after all as it is the rule for conquerors to die out if they change too quickly from one climate to another. Successful migrations have been excessively slow and not cataclysmic—anthropologists having changed opinions just as geologists have dropped all their cataclysmic theories. Races, after becoming adjusted, may remain fixed to the soil, unchanged for thousands of years, and in spite of being overrun by repeated conquests they are said to be indestructible. The negro is the same as our earliest records and Gadow says, "The difference between the oldest inhabitants of Egypt, the Naquada, and the present Fellahin are very slight." It is interesting to note that Dr. Petrie describes both classes of men, straight hair and curly hair as the earliest immigrants in Egypt and we know that even until the present time there has been a constant stream into that death-trap, for they all die out.

As a rough estimate, with nothing definite about it, but as a peg to hang a thought upon, we may assume that the following table shows when the various old world races reached their maximum brain development by migration from the north or from cessation of the glacial epoch.

Races.	Years ago.	Cu. ins. skull.
Lowest tropical savages.....	200,000	60
African negroes	160,000	70
North African and Berber.....	120,000	80
Chinese and Akkadian	100,000	85
South European (Mediterranean) type.	60,000	90
Central Europe	40,000	95
North Europe (Teutonic)	20,000	100

(See also Chart II.)

As the glacial time is in a sense still with us this brain evolution may have been going on here and there in the north until the Christian era. Malays seem to differ so greatly that they can be assumed to be survivors of a continuous stream from the earliest times. The Polynesians, though antedating the Malays according to anthropologists, may be comparatively late though earlier than the last Malays.

Do not the small Peruvian heads rather indicate that they are the earliest eastern wave of the Asiatic race which had evolved the necessary brain to get across the water? even antedating the Polynesian? The navigation of the Pacific is a mere nothing to the present peoples and offers no bar to such a migration. Joseph Jacobs ("The Story of Geological Discovery") says, "A native of Tahiti, named Tupaia, drew out for Cook a map of the Pacific, extending over forty-five degrees of longitude (nearly 3000 miles), giving the relative size and position of the main islands over that huge tract of ocean." Do the Peruvians not show the high antiquity of man in America and yet show why no wholly satisfactory evidences of glacial man are found? The Incas found that the year was a little less than $365\frac{1}{4}$ days and they used the Gregorian calendar 300 years before it was invented in Europe, and this development of astronomy surely took as long a time as the Egyptian or the Akkadian. If they had stayed in the less friendly environment of the Pacific they would still be Polynesians if not exterminated by later arrivals.

THE RATE OF MIGRATION.

The rate of movement in these successful migrations, must have been very slow, because it is an invariable rule that rapid migrations are fol-

lowed by extinction, there being no such process as acclimatization, as Ripley and others have proved. It is a law that a marked change of environment is fatal to any species of living thing, slow changes in environment only kill off the unfit and allow the fittest to form new species by that slow process of natural selection. Topinard (372) says, in referring to the sterility of some transplanted races, "the failure to become acclimatized seems to attack the germ in its very earliest development." Dumont (*Civilization et Dépopulation*, p. 156) shows that the poor aborigines have a higher birth rate than immigrants dwelling in towns and fertile plains. He shows also that various races in a country disappear in the inverse order of their appearance, as in France where the Frank has been absorbed by the Gaul. G. de Laponge (*La Vie et la Mort des Nations*, *Revue int. de Sociologie*, page 421, 1894) shows the invariable decadence of the dominating minority of intruders in a population from lessened birth rate, etc., and their eventual elimination, and the regaining of power by the lower inferior subjugated elements. With this return to power there is a lapse towards barbarism of course—a decadence of the civilization built up by the intruders.

The degeneration of all ancient civilizations is due to the fact that they have resulted from the rapid immigration of brainy races into a country of milder climate, occupied by inferior earlier arrivals; and have then died out, leaving the civilization in the hands of the stupid serfs. There are probably few or no traces of the men who developed the civilization of Chaldea, Persia, India, Egypt, Greece and Rome. The modern inhabitants in each place are not degenerate but strictly normal descendants of the lower classes—degenerate people die out invariably. The stupidity of the fifth of Italians elsewhere mentioned is not degeneration, but is probably an indication of descent from paleolithic predecessors of even the Etruscans, and they have not been able to advance in such a mild climate. Taylor gives (*Origin of Aryans*) very many illustrations of the above law of extinction after rapid migration. In my article on *Acclimatization* (*Phil. Med. Jour.*, Apr. 7, 1900) there are given the reasons for this extinction but we need not detail them here.

It is generally believed that without slavery, civilization would have been impossible. The presence of earlier inferior men in the conquered lands has thus been the real basis of civilization, for without their physical labor as slaves or serfs, the unacclimatized intruders could not have done the work. It would have killed them just as it kills whites to labor in the tropics now. The earliest records in Nippur show us upper classes in the cities, unable to live on their farms which are worked by lower aborigines. A similar state of affairs existed in prehistoric Europe. Only in modern times does machinery take the place of slavery.

The earlier products of the northern brain factory were thus invariably used as tools or as a higher domestic animal by the later products, and

this is exactly what Americans must do in the Philippines or be killed by the climate.

The actual rate of successful migration must have been very slow—a mere oozing along the soil of the lowlands, the paths selected can be seen at a glance at a relief map of the world. If in travelling south, a family would not wander more than a mile from its birthplace, it would take 4000 generations to reach Central Africa, say 100,000 years. There would be such a slow change in environment that the survival of the fittest could take place, and the race change.

The unfit blondes, least immune to disease, etc., would die most and the African types could well arise in this time. Acclimatization then is secured by evolving a new type, for those who finally reach the new climate may bear as little resemblance to their ancestors who started the movement, as negroes to the Teutons. All the lower races of men then are the result of a tremendous evolution, and it is absurd to call them degenerate descendants of higher ancestors, for such an involution is unknown. They are just as normal as the anthropoids, which are far from being degenerate men. In America there is so much less difference of type that we must presume a far less time for man's presence. Agassiz discovered that all the great races of men were confined to zoological provinces like other animals, and he recognized by the way that man like every other animal would die out if removed from his zone, and he got over the difficulty of human origin by supposing a separate creation for each variety of man in his own zone. Lyell, Dr. Morton, Bates, etc. (see Lyell, p. 496), showed that the American was an exception to these zones, arriving since the glacial he has not had time to differentiate types like the negro and Teuton. The dolichocephalic Eskimos were evidently the earlier arrivals, branches formerly living in Asia, at about 40 degrees of latitude (originally, of course, coming from Europe by an ice route), and in the 12th century they ranged as far south as the Potomac. The later brachycephalic Indians, coming from Asia, drove them north, where they are said to be dying out. No white colonies flourish nearer the equator than 40 degrees of latitude, the lower latitudes are never as prosperous as the higher. The southern hemisphere has no climate fit for Teuton except a bit of South America. Dr. Fred. Starr, of Chicago, thinks whites in America are reverting to the Indian type. Such a process would take immense time if it is to occur, but it is not likely that it will. It is more logical to assume that northern Indians, being new-comers were slowly changing to types found in northern Europe. To change an American so as to make him fit to live in the Philippines, is to make him a Malay or Negrito, and this would take ages, if it ever could be accomplished.

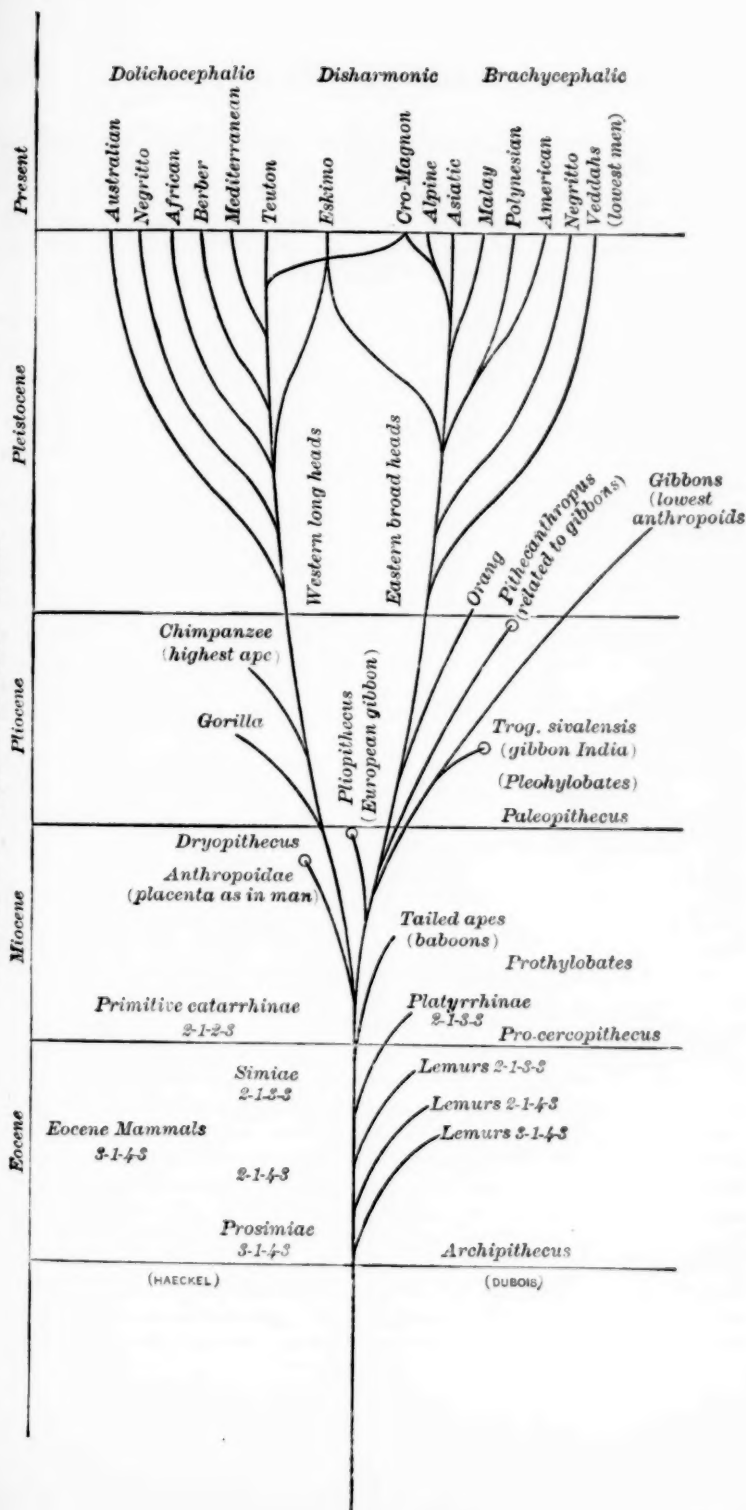
We have given numerous illustrations of these invasions from north to south, or highland to lowland (pp. 29 and 36) but it will do no harm to state a few more, as they all show a southern drift of brainier people conquering earlier arrivals. Very numerous illustrations are given in Taylor's "Origin of the Aryans" and in Dumont's "Civilization et

Dépopulation." Prof. Hilprecht's latest excavation at Nippur (Kengi or "Calneh in the land of Shinar") shows that the highly civilized Sumerians, the oldest known inhabitants, were constantly menaced by northern hordes, and were finally overthrown 4500 B. C. by barbarian Semites from the north, under the world-conqueror, Lugalzaggisi. He accepted the civilization of the conquered people and carried it on. After a temporary revolt the enervated Sumerians were again overwhelmed by barbarian Semites, who in their turn were overwhelmed about 2200 B. C. by northern hordes of Asiatics, the Turanian Elamites, from the highlands of Elam. These barbarians, talking an Akkadian dialect, sacked Nippur and departed. What a counterpart all this is to the similar repeated invasion of northern barbarians into the Mediterranean states, destroying and sacking, then accepting the civilization and carrying it forward.

How well this ancient southern drift is still kept up to repair the damage of extinction by tropical climates is illustrated in the following quotation from an article (Cosmopolitan, July, 1900) by Mr. Alex. H. Ford, upon the territorial expansion of Russia: "A steady stream of soldiers is still pouring over the Caucasus Mountains into the country of Iran, while from every outpost in Central Asia forces are marching southward for the advance into Persia and northwest Afghanistan, while across the Caspian sails a line of ships bearing men to fill the places of those who have gone forward." It is curious that the men who have undergone the greatest brain evolution, by reason of longest residence north, are now dividing the world into two parts, one controlled from the N. W. of Europe and the other from the N. E. of Europe; all of Europe south of 42 degrees latitude has no interest in this control. The two northernmost, Great Britain and Russia are gradually approaching each other in S. E. Asia, where future wars of supremacy are predicted, the frontier passing through China. "Russia has moved southward (in the region between the Caspian Sea and China) forcing civilization and peace upon ten millions of the most savage and predatory people the world has ever known." We can assume that Russian railroads will keep civilization alive for all time to come, for colonization has been replaced by spheres of influence or dependencies under temporary rulers who replace each other and then return north to their homes. Russian invasion of Manchuria is the most recent southern drift and it cannot be stopped by any earthly power.

The following quotation from Lord Macaulay's essay on "Warren Hastings" (see Edinburgh Review, 1841, p. 180) shows the drift of men to the tropics from vigorous climates where they were developed. "The people of Central Asia had always been to the inhabitants of India what the warriors of the German forests were to the subject of the decaying monarchy of Rome. The *dark*, slender and timid Hindoo shrank from a conflict with the strong muscles and resolute spirit of the *fair race*, which dwelt beyond the passes. There is reason to believe that, at a period anterior to the dawn of regular history, the

CHART IV.—MAN'S FAMILY TREE.



people who spoke the rich and flexible Sanscrit came from regions lying far beyond Hyphasis and the Hystaspes, and imposed their yoke on the children of the soil. It is certain that, during the last ten centuries, *a succession of invaders descended from the West on Hindostan*; nor was the course of conquest ever turned back towards the setting sun, till that memorable campaign in which the cross of St. George was planted on the walls of Ghizni."

The Emperors of Hindostan themselves came from the other side of the Great Mountain ridge, and it had always been their practice to recruit their armies from the hardy and valiant race from which their own illustrious house sprang.

The Chinese likewise, an Akkadian race from the western highlands, travelled to the lowlands of the east before 2500 B. C., finding a low people, who were driven to the mountains where their descendants, the Miao-tse are still found. The Chinese thus became fixed forever, and became an easy prey to vigorous Mongol invaders from the north, who conquered them time and again. The present brainy Manchu rulers are Mongols from the north.

We have mentioned (p. 24) the fact that Egyptian civilization, by tradition and other evidence, was not imported, but arose on the soil. Yet the whole course of Egyptian history gives evidence of one invasion after another of barbarous northern brainier people. The earliest monuments show two types, one coarse and African and the other refined and North Asiatic.

Finally, in America there has always been a southern drift, for there have been repeated conquests of Central America and Mexico by northern tribes, the Aztecs being very late. Probably the Algonquins would have been the Aryans of the new world if given time. There is still a drift from N. to S. in America to replace Southern families ever on the verge of extinction. Already the United States resembles Europe, in the north we find blonde Teutons, and in the south, brunette Mediterranean types.

The family tree (*Chart IV*) is added to show graphically the facts we have brought out as to the dual origin of man. The eocene and miocene are copied from Haeckel, that is, the primitive primates *prosimia* existed in the early eocene with 44 teeth of the same formulæ as the other eocene mammals (3-1-4-3). From these arose the fossil lemurs (3-1-4-3), the necrolepids (adapids, 2-1-4-3), and the younger autolemurs (stenopids, 2-1-3-3), resembling present lemurs. It also gave a branch in the late eocene, the *simia* (2-1-3-3) or ancestors of all monkeys. The platyrrhine (2-1-3-3) new-world monkeys branched off early, and the other branch of *catarrhine* or old-world monkeys (2-1-2-3, our present formula) came in the early miocene. An early branch was the *cynopithica* (dog apes) or tailed babboons, and the later branch was the *anthropoida* or tailless apes in the middle miocene. Here I place the hypothetical division of this generalized ape into eastern brachycephalic and western dolichocephalic because the gibbons, the

oldest and lowest, date from this horizon. The earliest branch was the *pliopithecus* in European (late miocene), the next was the *troglodytes sivalensis* in the early pliocene in India, and the last and most developed was the *pithecanthropus* of the late pliocene or early pleistocene, all related to the unchanged present gibbons. In the pliocene the gorilla was the first of the western branches and the chimpanzee the last, as it is the most human of the apes. The orang is intermediate in time between last two, but from eastern stem. The Vedda's (the most ape-like of men) must have branched early and gone south from the eastern stem. Then later came from the western stem the Australians, Africans, Berbers and Mediterranean types. From the eastern stem the Polynesians were first, though perhaps preceded by the Americans. Latest was the Alpine branch which invaded Europe, crossing with the Teutons as the extreme west to make disharmonic Cro-magnon. The Eskimo disharmonic cross comes from very early branches of both eastern and western stem, probably as early as the African and Polynesian branches. The geological times are distorted to make the tree more intelligible, for the pleistocene is made largest, whereas the eocene should be. From these main branches it is possible to insert every known subrace and even tribe.

Folk-lore studies have now made it possible to assert positively that races of men in like stages of development and in like environments, progress alike and evolve like fancies and ideas. Similar conditions, arts, etc., are not necessarily borrowed. Hence we can see no reasonable objection to the fact that similar conditions are found in the branches and twigs of the two stems of our hypothetical dual human development.

Races in both sides of this tree undoubtedly underwent similar evolution in characters like color, size, etc., due to environment. Hence every color can be found in each side. In the same way classifications according to hair may (like Haeckel's tables) contain races from each branch, though of course it is difficult to see why hair should change in shape by adjustment to changes in environment. Twigs of the main branches represent present races, and as they are sure to have crossed, we must expect to find an infinite variety in every branch.

The dual classification is really but a modification of De Quatrefage's triple one, uniting his negro and white branches into the longheads, and calling his yellow the broadheads, and removing the broadhead whites from his white race to the eastern branch.

CONCLUSIONS.

A legitimate conclusion to draw from all this is that as civilization and brain development have gone on hand in hand, the lower races which have not taken part in it are forever unfitted for it. Though specialized enough to take up some few special employments as an intruder in civilization, they cannot carry on the advance by themselves. They are also barred out

more effectually the sooner they escaped from the factory of brain. The negro is a survival of men who migrated too soon and whenever he is left alone he invariably reverts to ancestral life as in Haiti. His color and physique bar him from the best parts of this country where he quickly perishes, and the struggle in a civilized environment is causing such degeneration that he is producing a tremendous crop of degenerates in the south from bad food, bad habits and exposure. Crime, consumption and insanity increase and hasten the inevitable extinction. He is sure to become extinct and is not an exception to the rules of acclimatization as Shaler states.

The domestic animals are also mentioned as exceptions to the law of acclimatization by change of type, yet almost every one is wholly unadjusted to the climate where man takes it, and would promptly perish were it not protected from the climate. Others, such as dogs, surviving in every climate without protection, have actually changed in type like the bears. Eskimo dogs and polar bears are both killed by the heat, and tropical bears, as well as Mexican dogs, will die in the Arctics unless housed. Human parasites follow the same law and would die unless kept alive in an artificial environment independent of climate. No living thing will stand marked change of climate without change of type through destruction of unfit.

When Morel wrote his great epoch-making work on human degeneration prior to the publication of Darwin's and Wallace's theories, he undoubtedly opened a mine of enormous value, but he was woefully wrong in considering the lower races as degenerate forms of the higher—a mistake following from the general conception of a primitive high type of man. This mistake still tinctures scientific as well as popular literature. The lower races are smaller brained though absolutely normal, and perfectly adjusted to an environment deadly to a Frenchman. I can add my own slight experience to the effect that among the lower races I have found as little or less evidence of degeneration as among the higher. This condition of nervous instability is merely one of the natural methods of cleaning any race of its most unfit. The Chinese seem to lead with the greatest per cent of degenerates and the races on the north shores of the Mediterranean are a close second.

Does it not seem also that evolution of brain stopped in Asia long ages before it did in Europe and that all Asiatics are jet-sam of evolution? The only ones who went ahead were the restless ones who were forced into Europe from the teeming areas of the north of Asia—and who became the ancestors of the Celto-Slavic or Alpine stock who certainly have helped civilization as much as any other race, and who are part of the newest and most vigorous of moderns—Russia.

Our New York Indians are doing very well, as they had evolved a large brain and were really the pre-historic Aryans of the new world, yet they are not able to do anything towards the advance of civilization, though far in advance of the Peruvians and Aztecs. Some of them are living about as the lower Italians, both survivors of lower races in a civilization built up around them by brainier intruders.

Comparative theology has long shown the strict relation between the kind of religion and the kind of civilization, and it really should not be necessary to call attention to the fact that they both depend upon brain development nor to deny that religion causes civilization as Dr. Reid states ("The Present Evolution of Man"), and as the clergy have been in the habit of preaching for generations. If there is any relation it is the other way, for in mediaeval times theology has done the most to retard civilization. The further natural selection increases the brain the higher are the religious concepts. Mohammedanism is always found no higher than barbarism because that is the limit of the religious conception of people who have not brain enough to go beyond barbarism after their migration south, and it is absurd to say that it is a cause of their civilization. These people refuse to accept Christianity because they are incapable of understanding it, and if they could accept it, then, if that religion is the cause of civilization, they should at once become highly civilized, which we know the Christian Abyssinians have not done. When Christianity arose it was too abstract and advanced for the mass of Jews and it had to travel north in search of brain. The Romans too could not understand it and they only accepted it as a political measure from outside influence from the north. Indeed races accepting Christianity invariably change it to accord with their own

mental state, our own negroes even mixing it with voodooism. Taylor has shown that in Europe ("Orig. of the Aryans") there is a close relation between race and religions, that Italy cannot become Protestant nor Scandinavia accept the southern form, and that religious wars have always been race wars and we know that the latter are always wars of expansion for more room. Thus there has been a regular and progressive evolution of religion going on side by side with the evolution of brain and civilization, and in a geometrical ratio like civilization, for at the present time the theology of our pulpits would have caused the burning at the stake of its believers only a few centuries ago. Even thirty years ago the clergy would have been scandalized by present sermons.

Instead of recognizing that brain, which had developed for the sole end of surviving natural adversities, had subsequently been devoted to another purpose—civilization—writers announce all sorts of causes of man's brain development. The long period of infancy is stated as a cause by John Fiske, but it is a result of an evolution having nothing to do with the brain. Mammals arose simply because by normal variations some animals were able to give a trifle of nourishment to their young, and this slight advantage was really a tremendous one in the end, for it was the determining cause for survival where others like the saurians, though highly specialized became extinct as soon as enemies increased. It followed that those giving nourishment and care longest were able to survive in spite of physical feebleness. Hence the prolonging of infancy and pregnancy resulted ages before the brain developed to its maximum, and the earlier mammals were almost as brainless as the saurians. It is undoubtedly true that the more intelligent beings were able to look after their young the best and survived in larger numbers, but a long infancy by itself without other conditions of severity in the environment will not enlarge the brain any faster than it has done for the apes.

Articulate speech has also been given as a cause of brain development, whereas we have shown that it is a very recent result of brain development. The erect posture freeing the anterior limbs for development into arms and hands, is very closely connected with brain development, for the two went on simul-

taneously, each the cause, as well as the effect, of the other, for one is impossible without the other. Brainier animals not having the best variations in arm and hand were not as favorably situated as those which happened to have both variations—slight increase of brain as well as slight increase of arm specialization.

Let us relegate to the scientific garret all those predictions of the future big-headed man with attenuated body and the wide-hipped women with birth canals large enough for the children's heads. We need never be afraid of the narrow-hipped women dying out from inability to give birth to children. Future specialized brains will be small enough—they are small enough now, too small for their possessors' judgments to be trustworthy except in their narrow specialty and often not even in that. Nor need we be afraid of the future specialist being as limited as the idiot Blind Tom, such variations being always the result of degeneration and doomed to extinction. The fittest is and will be the specialist having sufficient intelligence besides to think over and utilize his special abilities to the greatest good. Such evolution cannot possibly be racial deterioration as Col. H. Elsdale asserts (*19th Cent.*, Aug.). Far from deterioration, it is evidence of very high social evolution. Men who do not know that evolution means the survival of the fittest and not necessarily the survival of what they may consider the best, are apt to enlarge upon the forced survival of the criminal, the feeble-minded and the specialist and claim that man upsets the laws of evolution. Man is unable to upset any law any more than he destroys the laws of gravitation by the invention of a balloon. He is just as much subject to evolution now as ever for "there is no truce to the struggle for existence." The evolution of the specialized small-brained man in civilization is never lawless but follows the law of the survival of the fittest—he is an item in that "change from a state of indefinite incoherent homogeneity to a state of definite heterogeneity" of the modern social body. He becomes an artist in the "harmonious orchestration of specialists."

Writers like John Fiske who think we have, through intelligence, escaped the influence of evolutionary laws, have wholly

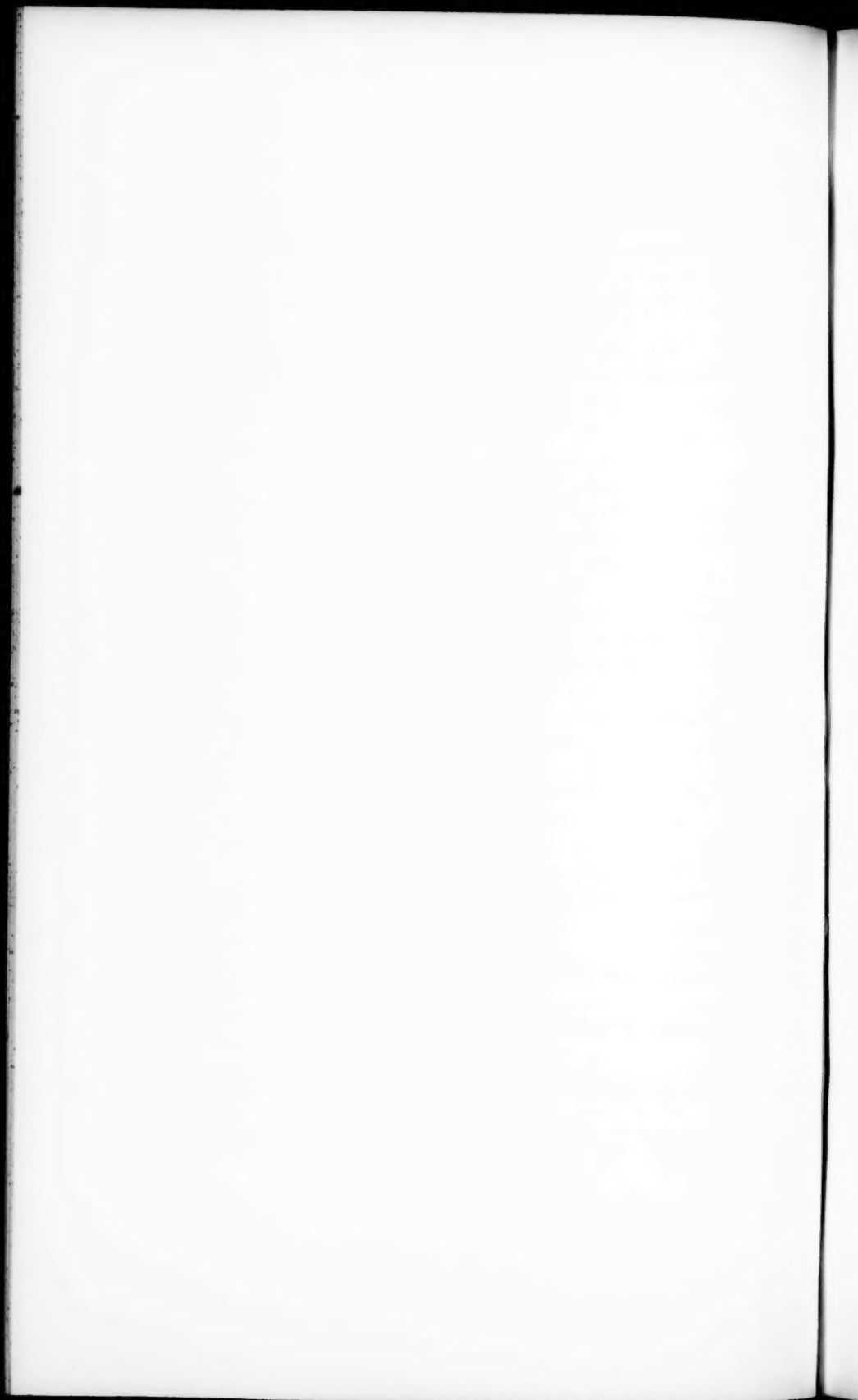
missed the essential idea of evolution. Instead of having escaped man seems now to be in a second stage of tremendously rapid evolution in the direction of specialization, an evolution more rapid even than that of the glacial times, for there is a marked change in the last 2000 years. It is another of Le Conte's "critical periods" (see p. 14), separating eras. The glacial period separated long eras of anthropoids and man, and this new critical period separates Le Conte's "Psychozoic era" into two parts of era of savage man, and the future era of specialists. Civilization will change us but we will not be degenerated, any more than frail hairless man is a degenerate gorilla.

In very many other respects man is now undergoing a most rapid evolution, but as it involves other characters than the brain we need only touch upon it. Men are always overcrowded for that is the basis of evolution, but the density of population is so great now that if we did not keep pace with it in our sanitary arrangements, to remove our own poisons, more than 9/10 of us would die. Thus in unsanitary England in the 14th century it is said that half of the four million people died of plague and one-fourth of the 100 millions in Europe. We are now eliminating those least immune to diseases of crowds such as consumption and typhoid, for these susceptibles are unfit for the environment. The most immune survive as the fittest, so that eventually all men will be immune to lung diseases like the Jews. We will also be immune to typhoid, or the crowd diseases will no longer be fatal, just as mumps, measles, etc., have ceased to be fatal in infancy. We need not follow it further, for it has been enlarged upon by Reid in "The Present Evolution of Man," it is only mentioned as further evidence that in other characteristics, as well as in brain, we are in a "critical period" of Le Conte, and undergoing a most tremendously rapid evolution. The cause of the last "critical period," the glacial climate, is not a bit more powerful factor, than the changes in living brought about by the present critical period—recent civilization.

In a remarkable posthumous paper (Cosmopolitan, March, 1901), Grant Allen rails against the British social system which preserves as parasites in the aristocracy, such inferior men and does its best to repress its best brains. He shows that there is

great variation in all families and states that "all men are born free and unequal." This is a curious mixture of two axioms and is not true. It is an axiom of political life, that "all men are born free and equal" and this is true; but in their other relations it is only true of paleolithic savages, for it is a law that,

Civilized men are born dependent and unequal.



PRESIDENTIAL ADDRESS, DELIVERED AT THE
ANNUAL MEETING OF THE AMERICAN MEDICO-
PSYCHOLOGICAL ASSOCIATION, HELD AT MIL-
WAUKEE, WIS., JUNE 11-14, 1901.

By P. M. WISE, M. D., of New York.

The responsibility which devolves upon me, as the one chosen from so many brilliant workers in the field of psychiatry to preside over your deliberations, is duly felt and appreciated. No endeavor of mine I know will equal the demand upon me; but, if depreciation of my abilities for this high office could be a requirement, I would meet it full measure. I ask your kind indulgence for my shortcomings. My greatest satisfaction is in occupying a place held by my predecessors whose names represent the highest and the best in our department of medicine, and in great degree in the large field of medical science. It was difficult to determine upon what subject I should address you, when in the consideration of every desirable one I found it had been better used by the abler men who have preceded me. Besides, I have long believed this annual opportunity might be more fruitfully applied to a review of progress in the recent past, and the indications and hopes for the future, than by the treatment of any definite subject; and with this in mind I will attempt to outline in a general way the perspective as it appears to me.

We are on the threshold of a great epoch, and standing at the entrance to a century which promises so much, after our farewell to the greatest century of the world's history, we feel the burden of the obligations which the new cycle of years has in store for us and our children. Shall we meet the expectation? Have we after all not reached the apex of human cognition, and has the time not come when in the vibration of human endeavor our strength shall wane; and has not the virgin soil of speculative philosophy become exhausted? There are no more elements

to discover and it seems as if of those which are known speculation as to their future application to the arts and sciences has reached the limit of human comprehension.

It might be appropriate at this time to review what the past century has accomplished in our special field of medicine, but this has been done by much abler hands, and we will leave it with a reference. We have left the old and are started on the new. We should cease looking backward to grasp the results hoped for. If we have taken ourselves to account for what has not been accomplished, we should now put forth our united efforts to heal the defect. That much has been accomplished cannot be denied. We might truthfully say that all that has been done to place alienated reason in its proper place, as manifestations of bodily disease, and its removal from the domain of the priest, the penologist, and the charlatan, belongs to the 19th century. "Who can minister to the mind diseased?" If this deathless query was answered before the days of Pinel and Tuke, it would have been in the prison, in the damp foul cells of monastic structures, or by the crack of the whip, the rattle of chains, or the diabolical sneer of inhuman jailers. But the civilization that opened the century ago had no limit to its bounding endeavor. With Excelsior on its banner, and science as its goal, regulated by Christlike impulses, it cleared away the fogs of superstition, heresy, and religious dogmatism, to build upon more stable foundations. That this impulse was slow in accomplishing results cannot be denied. The results we know; how the insane emerged from darkness into light, from demonism to human beings afflicted with bodily disease, from the accursed of God to the weak and suffering calling for our deepest pity and above all for the benefits of science.

If, therefore, we leave history, leave the past with its dead, and look ahead into the now dim perspective and attempt to interpret the veiled outlines by the aid of the defined foreground, it will not mean a prophetic effort as much as a search for those paths which offer the least resistance to progress. There is no straight path in science, neither is it broad. Sometimes the trail is lost and the pilgrim becomes confounded in the mazes of a strange country. Too often, alas! after intricacies which discourage and perplexities from diverging roads, the wanderer is finally brought up

against a wall without an outlet, or a *cul de sac* in which he struggles until translation solves all his problems for him.

It is chiefly the younger members of the Association to whom the roseate hues of ambition and promise retain their brilliancy—who looked forward, as those of declining vigor love to dwell on the memorable victories of their former active life, who hold the keys of progress and enlightenment, and upon whom depends the determination of the problems of to-day. If they emulate the examples to be found in the semi-centennial history of this body, in respect of loyalty to a defined purpose, stability and energy, and the sacrifice of personal ease and gain for the uplifting of the stricken of their race, the result is not doubtful. The virgin soil has been broken and tilled. This opportunity may not be theirs; but they have instead a great unfinished work that demands no less skill, labor, and persistence. They have also, what their fathers did not have, a public recognition and encouragement—a lifting of the hands.

One of the saddest and most discouraging experiences, to my mind, is contact with a medical staff refraining from investigation on the plea that the ground had already been well covered. The time-server has no part in the bright promises of the future. Neither has the superintendent who values housekeeping duties over clinical experience; and in this connection it may be stated that a most desirable change in hospital management is a relief to the medical chief from those practical but material duties alien to his chosen profession.

One of the great questions awaiting analysis by patient workers is the affinity of certain physical deviations and morbid mental phenomena. These are too great in number for mention here, but notably there are syphilis and general paralysis; genius and insanity; crime and epilepsy; phenomenal creations and amnesia, or sub-consciousness; spontaneity of original thought and epileptic attacks; a hyperacute moral conception and melancholia; the morphological and genetic relationship of heredity and atavism with alternately neurotic constitutions, certain bodily diseases, and nervous or mind disorders, etc., etc. •

Data are constantly accumulating, and methods for their derivation and classification are being progressively perfected, while public sentiment is being moulded into a conception of their

importance and desirability. Thus the stumbling blocks which impeded the work of your antecedents are being removed, while the machinery of collaboration is enhanced. It is the difference—between the past and future opportunities—of the stage coach and the limited express.

Perfection of method is a work which calls for the earliest and devoutest service of the true student. Systemizing has been displaced by specializing in altogether too great a degree, and about specialism is growing a shell which gives promise of a hardness and impenetrability which will put the clam to shame. It is the soft shell that should be nurtured and propagated, without discouraging proper classification of inquiry. The technique of modern science has become so enormous that the span of life and human capacity limit the individual student more and more as progression is made. Therefore systematic classification is not only a necessity, but is a science *per se*. How shall study effect the greatest results in a given time, is a question worthy of more attention than it has yet received.

Next to classification and scientific division of labor in this broad field for investigation, we must perfect association of effort and stimulate cooperation in a greater measure than now exists. It is painful to see the high fences which our more exclusive neighbors in psychological work surround themselves with and—although they may assert that they welcome all honest inquirers to their airing ground—it is not encouraging for the psychiatrist to sit under the collegiate psychologist and hear that phenomena of morbid mentality are among the elements which constitute the undercurrent of psychology, which psychologists proper have pigeon-holed as not reliable bases for their theories or laws. If we *are* in the undercurrent we are not content to be under-studies. The consequence is that but two active members of our association are members of the national organization of psychologists. Still we are concerned in the precise functions of life which our more didactic brother seekers after truth submit their total energy in attempting to demonstrate, except that ours deals more with the morbid deviation of function, and bears a closer relation to psycho-physics. We have the fearful practical scope of psychics. They may remain undisturbed in their laboratories, engaged in their chiefly subjective and theoretical inqui-

ries. With us indifference and romance and theory alike disappear in the active, hostile contention with the forces of fact. We have no opportunity to lull ourselves in agreeable fancy or illusion, for what we know and what we believe are constantly exposed to severe tests, and we are judged by them. But after all our tests are abiding, and the results are not wafted from one point to another by wind of doctrine. It is to psychiatry rather than to psychology that metaphysical alliance with the most inhuman treatment of stricken mankind the world has ever known was destroyed by a grand revolution, which in all the previous ages of the world's history has had no parallel.

Too much effort is expended in attempting to define the particular field of the respective sciences, and in defending the scope of each one from the intrusion of others. This is especially true of psychology, and it is best shown in the exclusion of morbid mental phenomena in the psychological schools. The danger of such a course has been shown by the upset of many psychological laws by clinical observation. Yet it is attempted to bring physics and psychology together, two extremes as wide as the poles. The unity of science is therefore an object to be hoped for, and to be urged by every earnest student. The field of psychology has been broadened as much by the study of morbid phenomena as of normal function. Take, for example, our present theory of consciousness; it owes the greater debt to psychopathology. This criticism applies to other sciences, and unfortunately in all there has been too great an effort toward specialism, in recent years, and too strictly defined boundaries. Communism of sciences will be, I believe, a condition of the perfected civilization which we are progressively nearing. The psychiatrist is not free from blame, as may be shown by the superficial knowledge of psychic experimentation and progress held by the mass of alienists. They are attracted and held by the practical in their work, and it is doubtful whether a tithe of the psychiatric profession of to-day could pass the examination in psychology required of undergraduates in our colleges. Here the great Kraepelin sets us a bright example, in keeping *en rapport* with and assisting in current psychic experimentation, as shown by the admirable and precise method of determining fatigue devised by him and quite generally accepted on the continent.

The speaker has no intention of exhibiting any peevish complaint of scientists who desire to devote themselves to science for its sake alone. The end of science is to enhance the welfare of mankind, and this, it is maintained, requires affiliation and cooperation, and not exclusion of allies. There are some notable exceptions, however, which are gloriously represented by Kraepelin and his disciples. It is from such men that we look for axioms to replace theories, and receive from them inspiration as well as progress, in the union of psychology and psychopathology. It is the professed aim of this foremost living psychiatrist to adapt the methods of experimental psychology, as carried on in modern laboratories, to useful methods of diagnosis in insanity and to pathological investigation. It is to such methods and such efforts we must look for future progress in the science we have embraced, and for a development of psychiatry into an exact science. In this connection I think you will admit that one great defect in the teaching of psychiatry is the failure to recognize or require the preliminary qualification of a course in and a knowledge of at least the fundamental facts of normal psychology—of mental science. It holds the same relation to psychopathology as physiology does to pathology; and if not, why not?

It is often charged against our special branch of medicine that, in many respects, we have made no advance in the last hundred years. A representative journal recently stated that "our knowledge of the essential nature of insanity, of the causes which foster and produce it, of the means by which it might be prevented and cured, is scarcely greater now than it was a hundred years ago." This shows crass ignorance; but is it a general public opinion? If so, then it is high time that the public should be enlightened. The reference doubtless is to the scientific side of the subject, for none are blind to the fact that the personal care and treatment of the insane has been revolutionized nearly within the nineteenth century. The profession at large believes and boldly declares that we have no pathology of insanity and that we have no systematic treatment based on pathology, but that our treatment is purely empirical, thus comparing psychiatry unfavorably with the other divisions of medicine. We must admit the fact that we have no pathology of insanity as a whole taking

in all forms and all degrees, but the most perverse pessimist must admit that the century has done for insanity in its practical aspect what the previous millennium failed to do. It has been established that insanity is primarily and essentially a disease of the body or rather a manifestation of such disease; that mind function has a physical basis; that the mental phenomena known as insanity is therefore a physical disorder. It has been further demonstrated what the structural changes are in some forms of insanity; not wholly, perfectly, and beyond cavil perhaps. But what organic disease has its pathology securely and unmistakably established? The trouble is that the profession at large will not recognize that psychiatry covers the proliferation of all other diseases and therefore has not and never can have a definite pathology of its own. That insanity after all is but the manifestation of disease and not the disease itself. Our symptomatic classification is largely to blame for this, I believe. We have discovered many facts in mental pathology and we are able to base treatment upon them such as they are. As insanity arises from many general diseases, so the pathology of those diseases belongs to psychiatry and becomes a part of psychopathology. More than that, if general pathology becomes a part of the pathology of insanity, then why should treatment based upon it be called empirical? It certainly cannot. Take, for instance, all the reflex insanities. The basic irritation is successfully treated, and the mental symptoms disappear. Or take the vast proportion of psychoses dependent upon nutritional defect. Are these empirically treated? As a matter of fact we are not understood by our brethren in the large pasture field, and they do not appreciate that we also came from there, and are using their experiences exactly as we did before we were segregated in the small corner lot.

Psychopathology differs from general or other special pathology in the complexity of the functions involved. It is quite impossible to ignore psychology in the relations of function and brain anatomy. Although there have been some brilliant discoveries in the physiology of the motor parts of the cortex, still with all the demonstration, the foundation of the pathology of motor and sensory disorder is theoretical, and will remain so until psychology becomes an invariable element in its study. Granting all the separateness of the higher and lower brain func-

The speaker has no intention of exhibiting any peevish complaint of scientists who desire to devote themselves to science for its sake alone. The end of science is to enhance the welfare of mankind, and this, it is maintained, requires affiliation and cooperation, and not exclusion of allies. There are some notable exceptions, however, which are gloriously represented by Kraepelin and his disciples. It is from such men that we look for axioms to replace theories, and receive from them inspiration as well as progress, in the union of psychology and psychopathology. It is the professed aim of this foremost living psychiatrist to adapt the methods of experimental psychology, as carried on in modern laboratories, to useful methods of diagnosis in insanity and to pathological investigation. It is to such methods and such efforts we must look for future progress in the science we have embraced, and for a development of psychiatry into an exact science. In this connection I think you will admit that one great defect in the teaching of psychiatry is the failure to recognize or require the preliminary qualification of a course in and a knowledge of at least the fundamental facts of normal psychology—of mental science. It holds the same relation to psychopathology as physiology does to pathology; and if not, why not?

It is often charged against our special branch of medicine that, in many respects, we have made no advance in the last hundred years. A representative journal recently stated that "our knowledge of the essential nature of insanity, of the causes which foster and produce it, of the means by which it might be prevented and cured, is scarcely greater now than it was a hundred years ago." This shows crass ignorance; but is it a general public opinion? If so, then it is high time that the public should be enlightened. The reference doubtless is to the scientific side of the subject, for none are blind to the fact that the personal care and treatment of the insane has been revolutionized nearly within the nineteenth century. The profession at large believes and boldly declares that we have no pathology of insanity and that we have no systematic treatment based on pathology, but that our treatment is purely empirical, thus comparing psychiatry unfavorably with the other divisions of medicine. We must admit the fact that we have no pathology of insanity as a whole taking

in all forms and all degrees, but the most perverse pessimist must admit that the century has done for insanity in its practical aspect what the previous millennium failed to do. It has been established that insanity is primarily and essentially a disease of the body or rather a manifestation of such disease; that mind function has a physical basis; that the mental phenomena known as insanity is therefore a physical disorder. It has been further demonstrated what the structural changes are in some forms of insanity; not wholly, perfectly, and beyond cavil perhaps. But what organic disease has its pathology securely and unmistakably established? The trouble is that the profession at large will not recognize that psychiatry covers the proliferation of all other diseases and therefore has not and never can have a definite pathology of its own. That insanity after all is but the manifestation of disease and not the disease itself. Our symptomatic classification is largely to blame for this, I believe. We have discovered many facts in mental pathology and we are able to base treatment upon them such as they are. As insanity arises from many general diseases, so the pathology of those diseases belongs to psychiatry and becomes a part of psychopathology. More than that, if general pathology becomes a part of the pathology of insanity, then why should treatment based upon it be called empirical? It certainly cannot. Take, for instance, all the reflex insanities. The basic irritation is successfully treated, and the mental symptoms disappear. Or take the vast proportion of psychoses dependent upon nutritional defect. Are these empirically treated? As a matter of fact we are not understood by our brethren in the large pasture field, and they do not appreciate that we also came from there, and are using their experiences exactly as we did before we were segregated in the small corner lot.

Psychopathology differs from general or other special pathology in the complexity of the functions involved. It is quite impossible to ignore psychology in the relations of function and brain anatomy. Although there have been some brilliant discoveries in the physiology of the motor parts of the cortex, still with all the demonstration, the foundation of the pathology of motor and sensory disorder is theoretical, and will remain so until psychology becomes an invariable element in its study. Granting all the separateness of the higher and lower brain func-

tions that has been claimed for them physiologically, when it comes to diseased structure the distinction is impaired. The same arterial supply feeds the higher and lower structure. Take paralytic dementia as an example. The incipient symptoms may be motor or psychic or both. In either case the involvement of the cortex as a whole is assumed. The pathology of delusions and hallucinations can certainly not precede the location and physiology of the several sensory functions. No reflection can be made on psychiatry for not anticipating the physiologist.

We contend, from a proper view-point, that psychiatry and psychopathology are not laggards, but are fully up and abreast with their allied sciences. What is the structural characteristic of predisposition to the psychoses? Is this not a proper inquiry to place before the physiological psychologist, and is it not a more reasonable query than that demand of the psychiatrist from the profession at large for a definite pathology of insanity? We claim that when the so-called higher psychologists can demonstrate some anatomical basis for psychic idiosyncrasies to the busy workers in practical benevolence and science, represented by this association, it will soon follow that the unassuming undercurrent of psychics, known popularly as "mad doctors," will show the pathological relation which the physical causes of insanity involving circulatory disorders, retarded metabolism, auto-intoxication, etc., holds to it. A noted psychopathologist recently stated to me that the greatest difficulty he experienced was the unreliability of the fundamental data which belonged to the field of physiology; that as no safe starting point could be found on the road it was necessary to start from the beginning. Whether this be a fact or fancied grievance, it is nevertheless true that no physiological truth has been demonstrated, but it was shortly followed by corresponding pathological data—speaking of the brain and its higher functions.

All attempts thus far to found psychiatry upon an anatomical basis have either led to failure, or have ended in some theory which has found but little favor as yet. From Meynert's day to the present there have been constant efforts to give anatomical explanations to the psychic functions, which have resulted in some ingenious theories but none have thus far been susceptible of demonstration. Improvement in technique has opened new

histological fields of work, and it is not at all fanciful to hope for a demonstration of thought action in the early part of the century. The scientific mind is skeptical and not inclined to receive circumstantial evidence of a scientific dictum. Cause and effect must be given an exposition which can be assimilated by the percept before we accept it, and even then there remains many a doubter. If we study the history of brain anatomy it is startling to find how fully the minute structures have been foretold in advance of their demonstration. But what will be the future course of psychopathology, and upon what great anatomical and physiological fact will it be demonstrated? Not, I am moved to say, by the projection theory of Meynert, or the retraction theory of later visionaries. The neuron is at the present day the anatomical unit, and from present indications the molecular constitution of the cell will be the functioning basis for some discoverable chemical process. We are being constantly drifted by clinical experience and the physiological laboratory to the conclusion that the vitalizing element of cell integrity depends more upon its chemical processes than upon structure, and that we may have marked digressions from the normal without structural change. The mechanism of normal fatigue, and the clinical experiences with acquired neurasthenia, and even melancholia in its milder forms, show the futility of research on past lines. The indications are that initial mental pathology is of a chemical nature, and leaves no traces in structure in the non-living tissues discoverable at least by present technique. As the neuron or its cell is the lowest unit of the nervous system for practical study, so each constituent of the cell and its appendage will receive separate and independent consideration. Optical improvements will permit a classification of cell matter which now seems impossible. Errors from technique will be excluded. A number of you will recall the "insanity granule" which excited so much interest a quarter of a century ago, but which is now well known to be a precipitate of the alcoholic preservative.

The efforts of Esquirol, in establishing the pathology of insanity upon a physical basis, were long in receiving the recognition which they deserved. Even at the present time the psychic theory of insanity has a strong popular belief, and is not wholly eliminated from the medical profession. "Moral insanity," a

most mischievous name, is popularly considered as a metaphysical phenomenon, or as a psychic corruption. The inherited anomalies of the nerve elements must be better demonstrated before they can be appreciated by the general physician. Griesinger was the greatest giant among psychiatric pioneers, and from his day the material basis for insanity has been received generally among the intelligent.

The incredulity with which psychiatrists, more than any class of scientists perhaps, have regarded phenomena not in evidence to the senses, or responsive to tests, which are usually considered by us as hallucinatory, or the result of fancy or superstition, should be modified to neutrality at least. The multiplication of evidence,¹ giving due allowance to fakes, hoaxes and deception, is too great to be sneered at. It is gross bigotry to deny that there are forces to us invisible and not subject to present tests. It is only a few years since that belief in the X-ray or wireless telegraphy would have met the same treatment which is now accorded to telepathy. Nothing short of the theory that all men are liars can meet the growing evidence that a psychic force exists which destroys space in some subjects, and gives one mind the power to act upon another without the intervention of the present known senses; a force independent of time, space, and medium. Because we do not know the why and wherefore is no reason for treating experience, or theories based upon it, with disrespect. We should keep our minds free from prejudice and our lips from pooh-pooh; and grant the concession that there is a force at present unknown which may require the sixth sense for its demonstration. "There are more things in heaven and earth, Horatio, than are dreamed of in your philosophy."

I want to sound a note of warning to superintendents of hospitals for the insane, although in doing so I may subject myself to the charge of stultification. It is that the medical heads of institutions must break away from the growing tendency to allow their time and attention to be absorbed by the business and fiscal work of the institutions. There are two dangers which threaten. Either the medical—the scientific spirit in the hospitals will pass

¹ "The Unknown" by Camille Flammarion. Pub. by Harper & Bros. New York.

into dry rot or be totally quenched, or there will be a commercial recognition of the absurdity of employing scientific men to perform duties not of their profession, and for which they have not been especially trained, with the result that the management will be divided between a medical and a fiscal head. I confidently assert that no insane hospital or asylum can be managed in the best interest of its creative purpose, or indeed, in the best interests of the taxpayers, and the well-being of the patients, when the medical head is deprived of any part of the management, and is not *de facto* the executive head of the institution. Remove from him the power of appointment, or the veto power in the business department, and there will grow up insidiously a deterioration of discipline and a lack of harmonious operation that reacts upon the results hoped for. There never can be two heads to a successful institution, and if there are instances where such an arrangement has seemed to be successful, it is an anomaly which makes that exception necessary to prove the rule. But, to avoid such a catastrophe, superintendents must not permit their interest in the scientific department of the institution to flag, or give their time and service to the business management at the expense of the medical. I know none of you would admit for a moment that such was the case, and I am well aware that in many hospitals it is not the case, but I ask you to analyze and classify conscientiously your services for the past year, and then go into your closet and pray. It is true that, technically, every executive act may have a medical aspect; for all hospital service, whether it be of a fiscal character or not, may have for its purpose the welfare and comfort, if not the *cure* of the insane (this is the common defense); but upon such a serious, such a vital question as this, we will not split hairs for the sake of an argument. The fact remains. It is for you to wrestle with it; oppose it with your might, bearing constantly in mind that assistant physicians take their cue from the superintendent, and if the medical spirit does not burn bright in the chief's attention and interest and work, his subordinates will lapse into that routine which is the coma preceding death of the scientific spirit. But you may ask, what can we do? The weekly rate of maintenance to our managers means more than the recovery rate. The only consistent reply must be that if you do not know it cannot be

taught you, and the accepted time has past. This criticism is not meant to be harsh, neither is it applied to all. No one more than the speaker appreciates the great responsibilities and the heavy burdens which are borne by superintendents, especially of our public hospitals; but of these responsibilities, I believe the most important are those pertaining to the treatment of the insane, and allied thereto the ætiology, pathology, and prevention of insanity.

A great defect which has always existed in the large public hospitals, and must be remedied before the great burden imposed on society by the care and maintenance of the insane can be much relieved, is the imperfect classification of the insane in asylums for custody rather than treatment. I say asylums rather than hospitals, for it is these classes which make asylums of the greater part of our hospitals. In looking over the history of this subject I find the fault to be universal, and it may be comparatively stated to have always existed. I take the privilege of quoting from a report of a medical superintendent in England fifty years ago. "I think greater care might be exercised by parish authorities in estimating the real necessity which may exist for sending to an asylum persons merely displaying the signs of decay and derangement of mind in the close of life." The same plaint exists to-day, and is increasing. With greater public confidence in the hospital care of the insane, there comes greater effort to free the domestic economy of the troublesome dotard through the easily obtained certificate of insanity. Thus the mortality of insane hospitals is increased, and the ratio of cures is lessened. If the source of supply cannot be lessened, there is no reason why classification should not relieve the hospitals by adapting construction, equipment, diet, and attendance more definitely than is now the case. It is a common experience to find convalescent wards occupied with a large proportion of senile cases, who have been thus classified because they are quiet, cleanly, and decorous. There is no medical reason for their location. They are maintained under a standard of care and treatment wholly unnecessary and uncalled for, either to establish an open-door ward, or to impress visitors. If dotards were classified and provided for under a more appropriate standard the burden would be lighter.

One of the earliest changes from the present uniform requirements for hospital treatment of the insane, I hope and believe, will be the psychopathic hospital, operated and managed like other general hospitals. Nearly forty years ago, in an address to the medical profession of Connecticut on "The Psychopathic Hospital of the Future,"² Dr. Pliny Earle outlined what we now appreciate is a requirement, and one soon to be realized I believe. There can be no doubt that the present system of commitment excludes from hospital treatment a large proportion of incipient cases, for whom treatment would be valuable. If such patients could be received in a hospital in advance of the stage of certifiable insanity, which must have led in many cases to an overt act before insanity is sufficiently evident for certification, there would be a marked relief to the community by a decrease of committed cases, if not of chronic ones who are a burden to the public during a long and useless life. There is now a reasonable hope lighted in the hearts that cherish a true sympathy for the afflicted, that the opprobrium which has rested on civilization in the civic treatment of the insane will be lifted, finally and forever. The time is not far distant, I trust, when hospital treatment will be available alike in degree and ease of attainment to all the sick in body, whether there is or is not a complication known as insanity; when it will not be necessary to *commit* an insane person like a criminal by a judicial order; or when insanity will be recognized as a symptom of physical disorder like delirium which may be treated as readily as other disorders without mental alienation.

One of the greatest functions of our profession is the prevention of disease, but in psychiatry the causes creating the morbid symptoms, aggregated under the term insanity, are so closely interwoven in social usages and the natural tendencies of civilization that they are far beyond the grasp of the psychiatrist even with the aid of the legislator. Thus we recognize in mental strain, overwork, and artificial stimulation, a fruitful cause of insanity; yet no element of personal liberty is farther from restraint than this. It is only by education that the individual can be induced to give himself the advantages of temperate mental

²Dr. Frederick Peterson of New York, in his annual address to the Association in 1899 gave an admirable résumé of the ideal psychopathic hospital of the future.

exercise and stimulation, and that moderate use of the mental faculties which strengthen and develop the brain, rather than the strain which exhausts and degenerates. There are also the social conditions created by the higher civilization, which constantly increase the value of prizes to be won by intense intellectual competition, and it is vain to cry the dangers to the ambitious army of struggling competitors.

"Oh, sons of Earth! attempt ye still to rise,
By mountains piled on mountains, to the skies?
Heaven still with laughter the vain toil surveys,
And buries *madmen* in the heaps they raise."

The delusions of Verrücktheit are not more exalted than some recent scientific experiments, and the fancies of dreaming prophets are not beyond the pale of the impossible, when men like Tesla proclaim messages received from neighboring planets. It is not surprising that the imagination should become disordered, when the real puts fancy and fiction to shame. The high tension of living does not menace longevity as much as the organic basis of that function which makes men gods and sons of God. Strain! Is not this the explanation in one word? Fatigue, exhaustion, followed by palliatives to sustain, without any slackening of the pace, not rest and reconstructives. We should not wonder at degenerative changes, and weakened progeneration, inherited vacuity and idiosyncrasies, which in time will create a racial predisposition to insanity. We feel helpless in dealing with this problem, and the only remedy in sight is instruction, enlightenment. No social or moral barrier will check the modern seeker after fame and fortune. He may be frightened.

In the remedial treatment of insanity there is unfortunately no early promise of any marked advance over present practice. We may reasonably expect that with a more perfect knowledge of pathological anatomy the application of remedies will be better perfected; and also that diatheses, rare conditions like acromegaly, and the toxic insanities may have an improved therapy. What may be looked for is a more precise application of the means now available, and a far greater intelligence in psychic therapeutics. It is notably true that some of the most potent mental remedies are quite neglected in the majority of hospitals.

Of these suggestion stands in the lead, and although it must be granted that its use is more difficult amongst the insane than others, still it frequently can be used with good results when all other remedies fail. In the field of mental therapeutics it is idle to hope that the seat of the functional disorder may ever be specifically treated, regardless of the perplexing irritations which sustain the morbid expression of brain disorder which we call insanity. After all, insanity is no more nor less than a group of symptoms. Whether the seat of consciousness, will and intellect, is diseased *per se*, or reflexly disturbed, science will be a glaring paradox before we reach a therapeutical law which is direct and circumscribed, and whatever psychopathology may unfold, it will lead us no nearer the therapeutical specific than we now are.

A disproportionate amount of time and energy has been given by our profession to the sociological aspect of insanity—the custodial care of the insane—during the past epoch. However, this should not be stated so broadly, for without the aid of medical men it is quite doubtful whether the humane results attained would have been possible. As a rule the chronic insane are well provided for; jail and almshouse care have been abolished; construction and its classification have been reasonably if not permanently settled. The most active public question of the present day is what shall ultimately be done with the enormous aggregation of human flotsam and jetsam, increasing the tax rate in a degree to make the doubtfully benevolent wrinkle their foreheads and grumble. Workers in this field it would seem could make greater progress by bringing the institutions and the community closer together, and by diverting the growing tendency to send every degenerate to the asylum as soon as commitment papers are available. The boarding out of tractable patients among strangers is not a hope deferred, as the plan is estimated by some of us, but a method of care not adapted to the class of population in the United States. It is doubtful whether much relief will be realized in this direction, as the experience in Massachusetts is quite enough to discourage boarding-out movements for some years to come. I believe there is much more to be hoped for in the subsidizing of families unable from poverty to maintain the demented family member. This

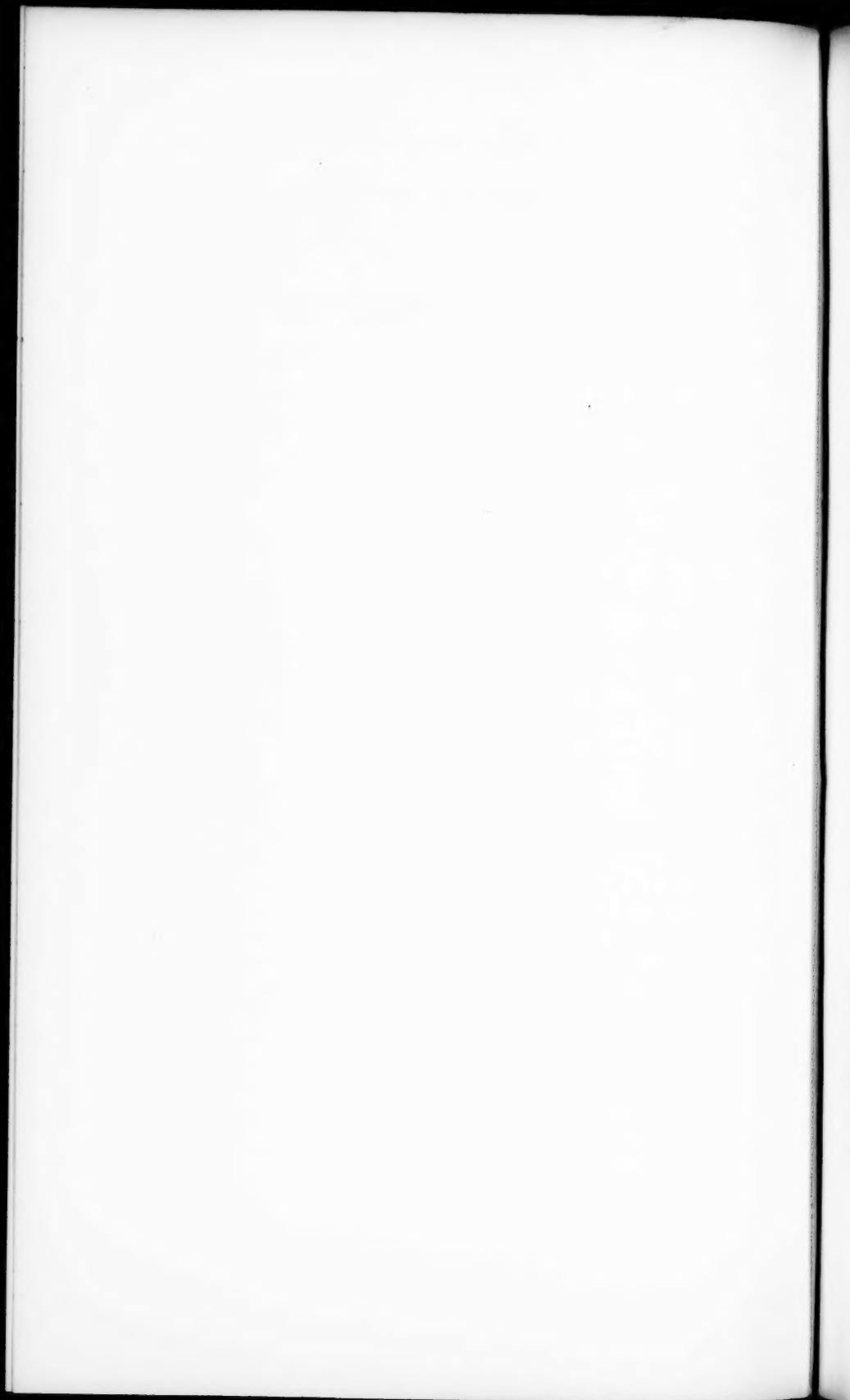
has never received the attention its importance deserves. "Willing but unable" applies to a fair proportion of relatives of patients in a condition to live in the community at large under some supervision. The resources offered by the boarding-out system in American families is too restricted to be seriously considered as a relief measure.

I believe a moment devoted to the subject of centralized supervision of the insane will not be amiss, although I quite appreciate its dangers. We have witnessed a notable experiment in State supervision by a commission having unusual powers, and it has been sufficiently long to make its experience worthy of very careful study. A stranger to American methods competent to weigh properly so serious a matter, might justly reach a conclusion that this experiment was not altogether successful. He might assume that from a business point of view results have been accomplished which would not have been attained under a more irregular and less centralized system. On the other hand, there is that indefinable something—a nucleus containing the vitalizing element of the broadest, the most liberal, and the most desirable of the psychiatric impulses—which has been checked in development, if not enucleated and the wound successfully cicatrized. Great practical results have doubtless been reached, which would not have been by other methods. Perhaps I am looking through a cylindrical prism, but I cannot help but feel that the past decade in this particular Commonwealth has witnessed the declension of a medical spirit very necessary to true progress. At any rate, in amending lunacy laws it may be well to bear in mind that revolutions are unwise in this epoch, and that more can be accomplished by gradual changes, keeping public attention and sentiment fixed on the necessity of curing the insane and providing comfortably for those not cured, rather than to the necessity for more careful watchfulness and supervision of the public servants who have the immediate performance of this thankless task.

And now my allotted time is exhausted and I have barely introduced the matters which I started to treat, and very imperfectly at that. I fear I have been dreaming and philosophizing, as it is sometimes customary for us to do. Whatever I have said to you has been with a feeling of humility rather than in the

spirit of criticism, and with the hope that in some mind I may have suggested an opening for successful endeavor. We must not relinquish the end in view. It may seem difficult to progress in the chosen road until more of the obstacles are removed, but by keeping at it sooner or later, the path will be free, we will see clearly, and we will be rewarded with success. I take the liberty of amending the poet's ringing call for my peroration—

"Not in vain the distance beacons. Forward, Forward, let us range,
Let the great world spin forever down the ringing grooves of change.
Thro' the shadow of the past we sweep into the younger day :
And the epoch shall not pass until we find the better way."



CEREBRAL HEMIATROPHY IN AN ADULT, WITH HEMIPLEGIA AND APHASIA.¹

BY A. H. HARRINGTON, M. D. AND W. L. WORCESTER, M. D.

It is believed by the authors of this paper that the case about to be reported is of sufficient interest to warrant bringing it before this Society, because, as far as we are able to determine, the pathology as related to the clinical history is somewhat obscure.

The feature in this case, which is of most interest, is indicated by the title of the paper, namely, "Cerebral Hemiatrophy in an Adult, with Hemiplegia and Aphasia"; but, to make a complete clinical picture of the case, it seems best to give briefly the entire history of the patient. The analytical statement of this history is as follows:

1st. An acute attack of mental disease in early adult life, with complete recovery.

2nd. The maintenance of a normal mental condition for a number of years, followed by an attack of mental disease similar in symptoms to the first.

3rd. Supervening during this last attack, hemiplegia with aphasia.

FAMILY HISTORY.

Patient's father was a steady user of alcoholics, but not given to intoxication. He was reported to have been insane during his life, but the nature of his mental disease could not be ascertained. He is said to have died at the age of 66, of "Cerebral Apoplexy." One brother of the patient was insane, and confined at one time in the McLean Hospital. One brother had locomotor ataxia.

Patient is said to have had fainting fits when a girl, at which times her face would become flushed.

¹ Read before the Boston Medico-Psychological Society.

She is said to have been a person of more than ordinary mental capacity, and possessed a cheerful disposition.

CLINICAL HISTORY (BY DR. HARRINGTON).

When twenty-four years of age she was committed to the McLean Hospital, suffering from an attack of mental disease of an acute nature. We are indebted to the McLean Hospital for a full record of the case, the substance of which is as follows:

"This attack began with sleeplessness, and she 'appeared run down,' this being followed by a silly condition, in which she laughed easily, and wrote silly and incoherent love letters to imaginary lovers. She complained of her head feeling badly, and for some time before admission did not seem to recognize her people. While in the hospital, she had outbursts of laughing, crying, and screaming, and was very silly, then became cataleptic—not answering questions, and often bursting into immoderate laughter." She then is said to have had a series of epileptic convulsions. Later on, she is said to have spoken a few words at a time. After a period of four or five months she improved comparatively rapidly, and recovered completely. She was discharged from the McLean Hospital in July, 1873, as "recovered," after a hospital residence of five months.

"She married two years later, and had four children. She was apparently normal up to 1896, when two children died as a result of accidents—in March and December, respectively, of the year 1896. The first death grieved her very much; the second death she took very calmly, but the record says she has not been 'bright' since, and has not slept well. She feared her 'mind would give way.' In December, 1897, one year after the death of her two children, and twenty-four years after her first attack of mental disease, she became depressed; thought she had no clothes; thought that she was the cause of the death of her children; thought she had not lived right."

In December, 1897, she was admitted for the second time to the McLean Hospital, going as a voluntary patient.

The record of her history while at the McLean after this second admission is given very fully. I will give the chief features of this record.

Physical examination on admission was negative, except that the tongue protruded a little to the left, and had a fibrillary tremor. There was considerable tremor of the facial muscles. She was evidently self-condemnatory and depressed. She would stand and gaze in one direction for a long time. She uttered somewhat confused delusions of a depressive nature, but often smiled. She answered somewhat reluctantly, but did not speak slowly. She knew where she was, and knew the time. She read fluently, and remembered fairly well what she had read. She gave age and birthday correctly. In the evening she told correctly what she had for dinner. She counted quickly, but stumbled over simple mathematical problems.

Five days after admission to the McLean Hospital she had an attack in which her eyes rolled up, her face turned dark, and then very pale, and then she appeared confused, but not incoherent. Her conversation was of a very depressive nature. After eight or nine days she spoke little, scarcely noticed anybody or anything; pulled at the doorknobs, pushed the patients about. Her attention could not be attracted. She resisted all efforts to care for her.

A few days later she was noted as staggering around, afterward the record says she almost fell, and looked very exhausted. She still continued to resist and became untidy. She grew emaciated after a time, and did not speak. She repeatedly gave evidence that she understood very well, and one day did everything the nurse asked her to do. From March, 1898, until June, 1898, she did not speak or answer questions, but lay in bed, and at times showed well marked "muscular negativism."

On August 15, eight months after her second admission to the McLean Hospital, she had a series of convulsions, commencing in the muscles of the left side of the face, then on the right side, then alternating between the right and left sides; at times, the whole body twitching. The convulsions continued for two hours—the last hour of which they were wholly confined to the right side.

A few days later, it was noticed that there was no difference in the nutrition of the two arms; the right was completely paralyzed, so that it fell flaccidly, whereas with the left arm the joints showed well-marked muscular negativism, and at times distinct

She is said to have been a person of more than ordinary mental capacity, and possessed a cheerful disposition.

CLINICAL HISTORY (BY DR. HARRINGTON).

When twenty-four years of age she was committed to the McLean Hospital, suffering from an attack of mental disease of an acute nature. We are indebted to the McLean Hospital for a full record of the case, the substance of which is as follows:

"This attack began with sleeplessness, and she 'appeared run down,' this being followed by a silly condition, in which she laughed easily, and wrote silly and incoherent love letters to imaginary lovers. She complained of her head feeling badly, and for some time before admission did not seem to recognize her people. While in the hospital, she had outbursts of laughing, crying, and screaming, and was very silly, then became cataleptic—not answering questions, and often bursting into immoderate laughter." She then is said to have had a series of epileptic convulsions. Later on, she is said to have spoken a few words at a time. After a period of four or five months she improved comparatively rapidly, and recovered completely. She was discharged from the McLean Hospital in July, 1873, as "recovered," after a hospital residence of five months.

"She married two years later, and had four children. She was apparently normal up to 1896, when two children died as a result of accidents—in March and December, respectively, of the year 1896. The first death grieved her very much; the second death she took very calmly, but the record says she has not been 'bright' since, and has not slept well. She feared her 'mind would give way.' In December, 1897, one year after the death of her two children, and twenty-four years after her first attack of mental disease, she became depressed; thought she had no clothes; thought that she was the cause of the death of her children; thought she had not lived right."

In December, 1897, she was admitted for the second time to the McLean Hospital, going as a voluntary patient.

The record of her history while at the McLean after this second admission is given very fully. I will give the chief features of this record.

Physical examination on admission was negative, except that the tongue protruded a little to the left, and had a fibrillary tremor. There was considerable tremor of the facial muscles. She was evidently self-condemnatory and depressed. She would stand and gaze in one direction for a long time. She uttered somewhat confused delusions of a depressive nature, but often smiled. She answered somewhat reluctantly, but did not speak slowly. She knew where she was, and knew the time. She read fluently, and remembered fairly well what she had read. She gave age and birthday correctly. In the evening she told correctly what she had for dinner. She counted quickly, but stumbled over simple mathematical problems.

Five days after admission to the McLean Hospital she had an attack in which her eyes rolled up, her face turned dark, and then very pale, and then she appeared confused, but not incoherent. Her conversation was of a very depressive nature. After eight or nine days she spoke little, scarcely noticed anybody or anything; pulled at the doorknobs, pushed the patients about. Her attention could not be attracted. She resisted all efforts to care for her.

A few days later she was noted as staggering around, afterward the record says she almost fell, and looked very exhausted. She still continued to resist and became untidy. She grew emaciated after a time, and did not speak. She repeatedly gave evidence that she understood very well, and one day did everything the nurse asked her to do. From March, 1898, until June, 1898, she did not speak or answer questions, but lay in bed, and at times showed well marked "muscular negativism."

On August 15, eight months after her second admission to the McLean Hospital, she had a series of convulsions, commencing in the muscles of the left side of the face, then on the right side, then alternating between the right and left sides; at times, the whole body twitching. The convulsions continued for two hours—the last hour of which they were wholly confined to the right side.

A few days later, it was noticed that there was no difference in the nutrition of the two arms; the right was completely paralyzed, so that it fell flaccidly, whereas with the left arm the joints showed well-marked muscular negativism, and at times distinct

catalepsy. There was a slight difference in the two facial halves, the right nasolabial fold appeared somewhat flatter. The patient cannot be made to perform any voluntary motions. When lying quietly, the upper lip on the left side hangs higher than on the right, so that the nasolabial fold is deeper. The forehead is equal on both sides. On the right side, between the eyelids, there is a larger gap than on the left, so that while the left eyelid covers a part of the iris, there is frequently seen a portion of the sclera above the iris, on the right, and this becomes distinctly marked when the patient looks down. There is inequality in the movement of the two eyes. The kneejerk on the left is difficult to obtain because the patient resists; on the right side it is well marked. No ankle or patella clonus. Plantar reflexes present on the left side, but not on the right. There is well-marked dermatographia on both sides. Electrical examination negative. Patient did not react to prick of pin on either side.

In October, although the muscles of the right arm had atrophied, no change was found on electrical examination. The patient seemed to feel the strong currents, as she cried out more markedly. After the first interosseus of the right hand had been tested, the index finger of that hand made a rapid flexion and extension movement of short excursion, chiefly in the metacarpophalangeal joint. This was repeated several times. Upon electrical examination, the arm was moved distinctly in the elbow and wrist joint.

In November, it was noticed that she continued to move her arm at the elbow and wrist as described above, but with no perceptible change. Her hand was held with fingers flexed upon the hand and partial flexion at the elbow, and she could move her arm voluntarily to some extent.

She continues to remain in bed, never speaks coherently, frequently shouts at the top of her voice, and is very untidy.

On May 25, 1899, she was transferred to the Danvers Insane Hospital.

Examination on admission to the Danvers Hospital was not at first satisfactorily made on account of the restless condition of the patient. It is noted that the arteries were not atheromatous. She paid no attention to examiner's questions, and kept stuttering and repeating such words as Ma! Ma! Ma! Sa! Sa! Sa! and other jargon.

May 30, two and one-half months after admission, the following notes were made:

There is no apparent facial paralysis. Tongue deviates somewhat to the right. Right arm and hand seem partially contracted. In walking, she keeps her right knee partially flexed, and it has a tendency to give way under her. She appears to understand some directions; gives her hand when asked to, and opens her mouth when asked to show her tongue, but cannot be induced to put her hand on her head.

Occasionally, she speaks a few intelligible words, and said in reply to a direction, "I can't," twice. Said, "Oh! I don't know," and "Well, I guess." Will sometimes repeat a word that is said to her, but most of her vocal sounds are meaningless syllables repeated over and over. Nurse reports that she seems to have difficulty in swallowing.

July 31. Screams and makes inarticulate sounds a great deal of the time. She appears to know the names of some of the nurses, and will repeat them over and over. Will at times repeat other words. Yesterday, read the name "Sarah" on a nurses apron, and kept repeating it for some time. Soils and wets her clothing.

During the next three months of her life she had three or four attacks of general convulsions, finally a series of convulsions were followed by her death.

The clinical diagnosis of the case now remains to be considered.

It is evident that at the age of twenty-four, the patient had an acute psychosis. This attack appears from the clinical account to have been of the maniacal-depressive type with manifestations of the katatonic symptom complex, as evidenced in the mutism and the cataleptic state.

After recovery and twenty-four years of mental health, if the history given by her family is correct, as I believe from personal interview that it was, there appears to have been a recurrence of mental symptoms similar to the first attack. There was mental depression and confusion. We observe also in this second attack katatonic manifestations, as it is noted that from March to June of 1898, the patient did not speak, but lay in bed and showed "muscular negativism." Then, about two months later,

occurred a series of convulsions followed by an unmistakable hemiplegic condition of the right side and pronounced aphasia.

It will be remembered that during the latter part of the first attack, there were convulsions, but during the twenty-four years of mental health which followed, nothing of an epileptic nature could be ascertained.

We are not warranted, it seems to me, in making any positive assertion as to the bearing of the first and second attacks upon each other, beyond saying that the early portion of the second attack bore a close resemblance to the first, and we are reminded of the possibility of the recurrence of a psychosis. The latter manifestations of the second attack, however, place the case for the final months of the patient's life in the group of organic diseases. The possibility of general paralysis has to be considered, but the hemiplegia and aphasia are against its being a clear case of that disease.

The diagnosis for the last of the patient's life, which was determined and recorded, was "post-paralytic dementia with hemiplegia and aphasia."

AUTOPSY (BY DR. WORCESTER).

At the autopsy, the findings as regards the nervous system were as follows:

Nothing of interest noted in regard to cranium and dura.

Pia-arachnoid cloudy and oedematous; separated readily from brain.

Cerebral vessels not atheromatous. No obstruction discovered on careful inspection.

Right hemisphere presented no noticeable abnormality.

Left hemisphere considerably smaller than the right, with narrow convolutions and gaping sulci. This was specially noticeable in the frontal and temporal lobes. The island of Reil was partly exposed by their retraction. The cortex of this hemisphere appeared unusually friable, and its superficial layer, although nowhere adherent to the membranes, was abraded in spots in handling it. A little behind the upper end of the posterior central gyrus was a small discolored spot, appearing as if due to superficial necrosis.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.



FIG. 5.

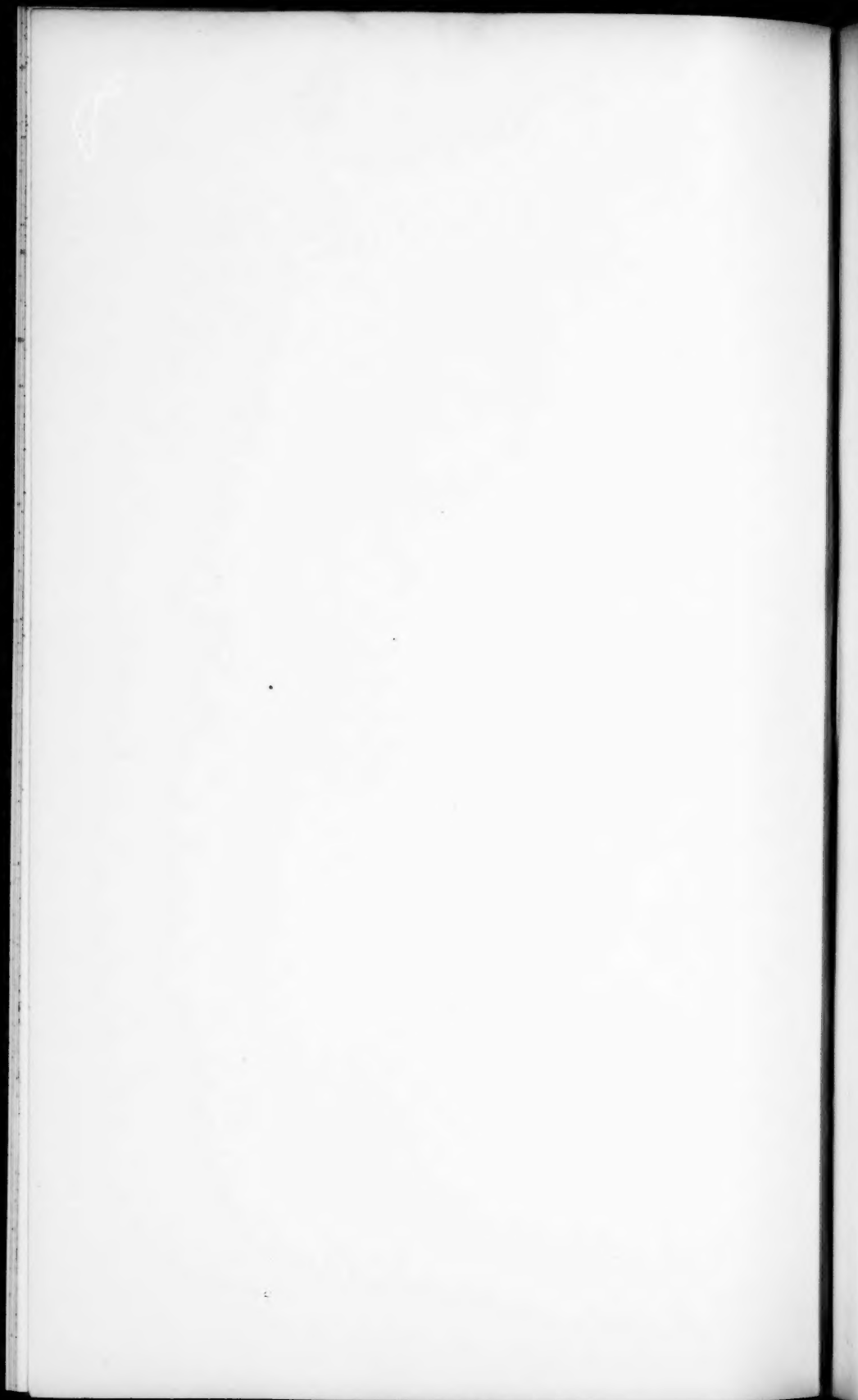




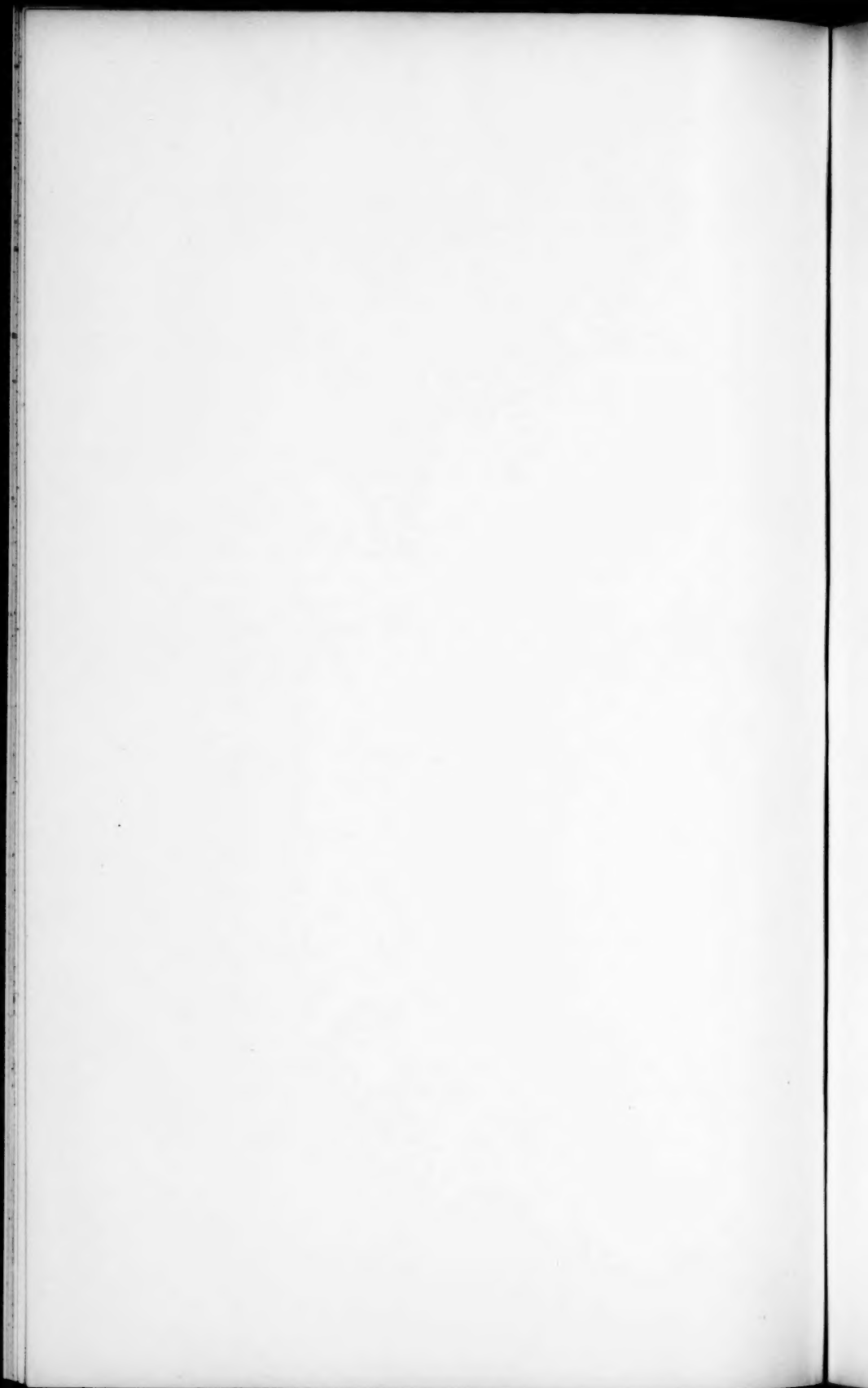
FIG. 6.



FIG. 7.



FIG. 8.



The brain weighed, with the membranes, 973 grammes. It was hardened in formalin before dissection. The following additional facts were then ascertained:

The right hemisphere weighed 445, the left, 342 grammes.

The left lateral ventricle was very greatly dilated in its entire extent.

For about the middle third of the posterior branch of the fissure of Sylvius, the cortex of the inner aspect of the first left temporal convolution and of the lower half of the island of Reil was greatly atrophied, and over a portion of this area its superficial portion separated when the section was made. No focus, either of hæmorrhage or softening, was found in the interior of the brain.

There was no marked asymmetry of the corpora striata, but the left optic thalamus was much smaller than the right.

The right hemisphere of the cerebellum was very much smaller than the left. The apparent disproportion was even greater than in the cerebrum. The accompanying photographs afford good illustrations of these various points.

Nothing noticeably abnormal was discovered on inspection of the spinal cord.

On microscopical examination of the region already mentioned, in the left fissure of Sylvius, the cortex appears very greatly atrophied, and it is evident that the nerve-cells have, to a large extent, disappeared. They are still to be seen, however, in considerable numbers, greatly atrophied; in many cases only the nuclei are distinguishable. The cortex is greatly diminished in thickness. There is no apparent hypertrophy of neuroglia in the cortex, and its blood-vessels are not conspicuously altered. In the underlying white substance, spider-cells are to be seen in considerable numbers, and many of the vessels are tortuous. There is nothing suggestive of a deficient blood supply.

In sections from corresponding portions of the cortex of the two hemispheres elsewhere, the differences in the number and appearance of the nerve-cells are not striking. Owing to thinning of the cortex of the left hemisphere, the cells appear more crowded and in some portions more slender than in the corresponding sections from the right hemisphere. Some peculiar appearances are seen in the nuclei of nerve-cells, of the signifi-

cance of which I am not satisfied, but they are quite as noticeable in the right as the left hemisphere, and can hardly, I think, be responsible for the atrophy of the latter.

In both cornua Ammonis, the nucleus fasciæ dentatæ are almost destitute of nerve-cells. The stratum pyramidale is not atrophied. Sections from the second frontal gyrus of each side stained with Wolters' modification of the Weigert stain show no marked difference in the numbers of medullated fibres in the cortex.

The shrinkage appears to be more at the expense of the white than the gray matter. There is no conspicuous proliferation of neuroglia in the cortex of the portions examined.

Specimens from both lateral lobes of the cerebellum show a great diminution in number of the Purkinjean cells. On the right side, they are entirely wanting over large areas; in many cases a pretty large section can be examined without finding one. The few that remain present, for the most part, a normal appearance. The cells of the granular layer are very greatly reduced in number, and in certain areas are almost entirely wanting. The molecular layer is reduced to about half its normal thickness, and appears to be made up mainly of parallel neuroglia fibres, running perpendicularly to its surface. In the medullary portion, the nerve-fibres are much reduced in number, and there is some hypertrophy of neuroglia.

In sections from different parts of the left lateral lobe, the number of Purkinjean cells varies considerably, although they appeared to be nowhere present in anywhere nearly normal abundance, and are sometimes entirely absent over large areas. Most of those which remain are normal in appearance, although some appear to be in process of atrophy. Apart from the absence of these cells, the tissue is of healthy appearance.

In the medulla and pons, sections stained by Van Gieson's and Wolters' methods show nothing abnormal except a pretty considerable degeneration of the left pyramidal tract. Sections stained by the Marchi method show the presence of a small number of degenerated fibres confined to the same tract. Sections from the spinal cord at various levels seem normal except for a marked degeneration of the crossed pyramidal tract.

To recapitulate: We have, in this case, clinically, right hemi-

plegia with contractures, and pretty complete aphasia, occurring in a woman previously insane, subsequently to a series of severe convulsive seizures. Anatomically, there was atrophy of the entire left hemisphere of the cerebrum and of the pyramidal tract connected with it, as well as of the opposite hemisphere of the cerebellum. There was no evidence of hæmorrhage or of arterial obstruction, nor anything which could be considered a focal lesion, although the changes appeared to be more marked in the fissure of Sylvius, the optic thalamus and the cerebellum than elsewhere.

In view of the previous symptoms of the patient, it is perhaps pertinent to enquire to what extent her condition was to be attributed to the anatomical lesions. The changes in the central nervous system bore a very strong resemblance to those often found in cases of infantile hemiplegia, and it might be questioned whether they were not actually of long standing.

For my own part, I feel no doubt that the hemiplegia was due to the lesions. To suppose the contrary would require us to believe, first, that these changes had existed during a pretty long life without producing symptoms, and, secondly, that hemiplegia had occurred suddenly without any demonstrable lesion, each of which hypotheses, taken by itself, seems sufficiently improbable, while the combination of the two, to my mind, is scarcely credible. But, furthermore, the recent origin of the anatomical changes is, as it seems to me, put beyond reasonable doubt by the fact that the Marchi stain reveals the presence of degenerated myeline in the pyramidal tract.

It must, I think, be considered doubtful to what extent the patient's dementia and disturbances of speech were attributable to the anatomical changes. She had previously been in a stupid condition, and had gone for pretty long periods without uttering anything but inarticulate sounds. On the other hand, such extensive lesions could hardly be compatible with mental soundness, and the degree of atrophy in and about the fissure of Sylvius would be sufficient to account for almost any degree of aphasia. I can only say that the patient always impressed me as suffering from a very grave organic speech-defect, but that it seems to me probable that her dementia was not entirely due to atrophy of the brain.

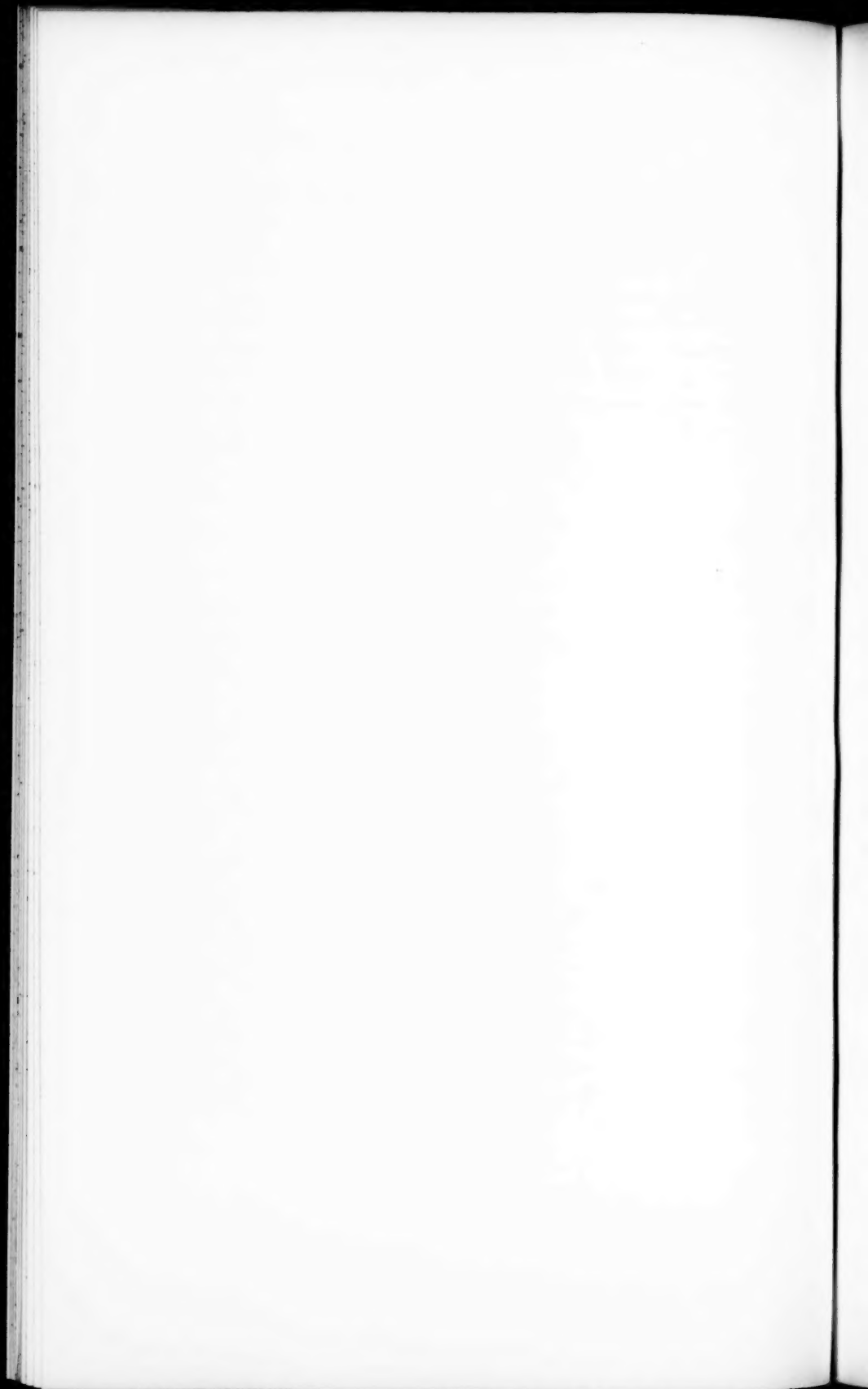
A question of still greater interest and obscurity is that of the nature of the original pathological process. The usual causes of permanent hemiplegia, in adults at least, are hæmorrhage and arterial obstruction, both of which can, I think, be excluded in this case. Strümpell has advanced the hypothesis of a poliio-encephalitis to account for similar conditions in cases of infantile hemiplegia. It may not be possible to exclude such a process in this case, but I was unable to find any affirmative evidence of it. The appearances are, to my mind, no more suggestive of an inflammatory process than those found in the cerebral atrophy of senile dementia.

In a recent article by Mott and Tredgold,¹ on Hemi-atrophy of the Brain and its Results on the Cerebellum, Medulla and Spinal Cord, the authors take the ground that crossed atrophy of the cerebellum is always due to a primary lesion in the basal ganglia. In my case, as already mentioned, there does not seem to be any marked shrinkage of the nucleus lenticularis. The optic thalamus is markedly diminished in size, but I find no evidence of a focal lesion there, and believe the diminution to be secondary to the changes in the cerebrum, rather than the reverse. The changes in the atrophied lobe of the cerebellum are precisely similar to those described by these authors in one of their cases, but the layer of cells which they describe as lying immediately under the Purkinjean cells in the cerebellar cortex, and as being preserved, while the other cellular elements of the cortex are, to a great extent, destroyed, seems to me to be, unquestionably, neuroglial, not nervous in its nature. The very great deficiency of Purkinjean cells in the opposite lobe of the cerebellum, without any apparent atrophy of either the molecular or the granular layer, is remarkable, and, to me, inexplicable.

The great similarity of this case, both in clinical history and anatomical lesions, to many cases of infantile cerebral paralysis is obvious. It seems to me scarcely doubtful that it is of essentially the same nature, but I have been unable to find, in the literature accessible to me, an account of a similar case occurring in an adult. I have never been able to satisfy myself that the post-mortem appearances found in some of the cases which I

¹ Brain, vol. 23, 1900, p. 239.

have had the opportunity of examining were satisfactorily accounted for by any of the explanations that I have seen. I cannot claim that my case throws any positive light upon this subject, but it seems to show that neither cerebral hæmorrhage nor arterial obstruction accounts for all the cases. The first step in the solution of a problem is the appreciation that there is a problem to be solved. So long as we rest satisfied with erroneous explanations, we shall look no further. Reports of careful post-mortem examinations of recent cases of this kind are much to be desired.



DISPENSARY TREATMENT OF MENTAL DISEASES.¹

By WALTER CHANNING, M. D.

During the past fifty years the public has gradually come to look at insanity more intelligently and many misconceptions have been cleared away. Many yet remain, however, which only time and education will eventually remove. Physicians I believe must give this education, but what opportunities are afforded them for acquiring the necessary knowledge? One of the best should be through the instruction they receive as students when their minds are impressionable and they are anxious to learn. I have had some work in this direction in connection with the instruction of students in the Tufts College Medical School. It has been my privilege in the pursuit of this object to be able to give clinical lectures at the Boston Insane Hospital illustrative of the different forms of insanity. The belief with which I started that there was no way so successful to interest students as by object-teaching has been verified. It is hardly possible to expect medical students overcrowded with work to take a very active interest in this subject treated didactically, even if comprehensively and scientifically done. To the average student mind it is of necessity dry and presents no very distinct correlation with other forms of disease. Interest is of course a prime factor in all education, and I believe that I have interested the students by the clinical instruction I have given them and been the means of imparting ideas which in their treatment of insane persons and of diseases in general must bear some fruit.

While I would not underestimate the value of the teaching of psychiatry in the way outlined, I have found that in the conditions which have presented themselves to me from day to day, some further means of getting at the profession was desir-

¹Read at the meeting of the American Neurological Association, June 21, 1901.

able, and it occurred to me that a department of mental diseases at one of our large dispensaries or hospital out-patient departments might be of value in this as well as other directions. Ambulatory cases of mental disturbances had been incidentally treated at these institutions, we might say, from their foundation, but the fact that they were essentially mental and to be treated on that side had been given no prominence, and hence of course it could hardly be expected that the mental or moral causes would have received much attention. In a department for mental diseases, in the first place, a differentiation could be made whereby cases in which the symptoms were largely or wholly mental could be grouped together. There might be a good many of them, if an investigation were made with sufficient thoroughness, to bring into bolder relief the diseases that had a conspicuous mental element in them. I knew also that there were alcoholics, epileptics, defective children, to say nothing of cases of organic disease of the nervous system with mental symptoms which made the rounds of out-patient departments and could not receive adequate attention because of the pressure of the more acute forms of disease. It seemed to me that a department of mental diseases might relieve the pressure on other departments of these cases which often were an annoyance to them, but could receive adequate study in the mental department. Then, too, I knew that there were occasional cases where the diagnosis might be doubtful, or others where steps should be taken for immediate commitment. The department spoken of could be ready to see cases and take the responsibility of their disposition at any time. It would be, as it were, a repository for the troublesome, a clearing house for doubtful cases, and a bureau of information in regard to the necessary machinery to be made use of in committing or otherwise disposing of patients.

The Boston Dispensary, which treats annually about fifty thousand cases, has, besides its staff at the central office, a large number of physicians who visit patients in their homes, the whole city being divided into districts, and it seemed to me that these physicians in their daily practice could also be much assisted by a member of the staff at the central office who had special knowledge of mental disease.

In view of all facts detailed, in 1897 I explained to the super-

intendent and some of the members of the staff the plan above outlined, which met with their approval, and in December of that year I organized the department with Dr. Arthur C. Jelly to assist me. There had been, I may say in passing, for some years before that time connected with the Pennsylvania Hospital for the Insane in Philadelphia, an out-patient department for mental diseases; otherwise, as far as I know, no systematic attempt had ever been made in this direction in this country.

Our work for the first three years I believe, while not by any means having accomplished all it might, bears out the theories which led to its establishment. Of the nearly four hundred patients we have had up to the present time, a considerable number have been developed cases of insanity, some of them recognized and others not, which have been kept under observation and treatment, and when necessary sent to hospitals. Incipient cases have come to us which have been at once taken in hand and occasionally the attack has been averted; and by watching these cases, we believe that something has been done to guard the community against a source of danger. It has also been proved to my satisfaction that there are more cases of insanity in the community at large than is generally suspected. Many cases of neurasthenia with depression have come to us and we believe that intelligent treatment has prevented some of these from developing into insanity. There has been also a number of epileptics and sometimes cases of simple depression with no other symptoms, but requiring care and help. An increasing number of defective children has been brought to us, and we believe that such a department can do much good in calling attention to these children whose condition has heretofore escaped recognition from the lack of careful investigation. Owing to the large number of defective, degenerate, ignorant and sickly parents found in the poorer classes of a large city, children who are defective and require either training in special classes at school, or care in institutions for imbeciles, exist to a considerable extent. From a lack of any system whereby their condition can be discovered they grow up and are a menace to society. In some cases perhaps they are so unfit to care for themselves that finally, when it is too late for improvement, they drift into institutions. Some of them furnish a portion of the

dullards in the schools, who are such an injury to the advance of the average pupils. Others become tramps or criminals. The girls often become the mothers of illegitimate children, and so spread the circle of degeneration and defect wider and wider.

It is my desire to make the diagnosis of *defect to an abnormal degree in children* an important branch of work in our department. Each case requires an amount of time to make a careful examination and record, including measurements, which is not at the disposal of the physician in the dispensary, who of necessity has a large number of cases to treat in one morning. Some department should do it in particular; all doubtful cases being sent to it. By a sufficient number of investigations eventually a correct method of examination should be developed. So far I have endeavored to make use of the work done by Warner, Shuttleworth, Down, Fletcher Beach and various writers on physical and mental defect. It is not difficult to ascertain both physical and mental defects, but it is difficult to set a standard for a physical average which can act as a control. It seems to be the fact that at present almost no physicians, in Boston at any rate, regard themselves as experts on the subject under discussion. For some years I have been called on to give advice to charitable societies as to what should be done with difficult or peculiar young children. These are now brought to our department at the dispensary. If we can have a large number of defective children sent to us, we ought to develop something in the way of a reliable method of examination and diagnosis. We should teach medical students how to do this work, and we also may be able to gradually collect statistics.

There is more to teach students in a mental department than might at first sight appear. They spend so much time in their regular work studying physical disease that they are often awkward in getting at the mind of a patient. They lack knowledge of normal mental states and mental disease is a closed book to them. I have found it of great help to students to take cases of limited delusion or hallucination, as we find them in the dispensary patients, and examine into their evolution. Cranks as we know are often the subjects of single fixed ideas, and as in many ways they reason and act like ordinary individuals and are more responsive therefore to questions, than when the mental

disturbance is more profound, they are excellent material for demonstration. It is a good thing to bring students face to face with patients on the border-line of insanity, or who may have just crossed it, for it is at that point that they will later come into contact with them. Then, furthermore, having had some experience in examining the early cases, they will be on the lookout for them and perhaps in this way help to prevent attacks that may be dangerous in their results to the patient or the community. To teach students to investigate the causes of insanity, and endeavor to protect society as much as possible, is one of the lessons I strive to inculcate. Anything to bring the lesson home is of value, and I believe a dispensary clinic helps to do this.

While our department has been of use in taking hold of incipient cases and either preventing the development of the attack or getting the patient early to the hospital where he received prompt treatment; on the other hand, we have also been the means of keeping cases *from* going to the hospital. An inexperienced physician sometimes is as apt to take alarm where there is no occasion, as he is apt, on the other hand, to wait too long before doing anything. It is, of course, with the overcrowding of our hospitals, a great advantage to keep patients out of them as no doubt could be done more often than is now the case. It is quite as much the province of the specialist to treat patients out of the hospital as to get them into it. The point is to recognize that disease exists and it is the treatment, whatever it may be, that is wanted and wanted as early as possible. The hospital is simply a place where the treatment can be carried out better than is possible at home and should not be an end, but only a means. The idea is too common among laymen that a patient is committed for a certain length of time, very much as if he had been sent to prison.

The clinical work which I have endeavored to do in connection with the examination of my patients at the dispensary has been considerable, as will be seen from the list of questions appended on the case record card. If they are recorded properly it is almost imperative that the patients should receive a careful examination. By doing this in every instance and constantly day after day the habit must necessarily be acquired of being thorough and fairly accurate. It will be seen that many

of the questions asked have a relation to the physical condition and are calculated to call attention to points which have been discussed in regard to mental diseases and it is desirable to get more light on. What measurements, for instance, of the head should we be expected to get? Do we find peculiarities of the eyes, ears, palate, etc.? What is the physiognomy, and what changes do we find in the general or localized coördinations?

SAMPLE CASE RECORD CARD (REDUCED SIZE).

No.

Boston Dispensary.
Department for Mental Diseases.

Diagnosis:

Name:

Date,

190—. Residence

Age,

. Nativity,

. Civil condition,

Physical Examination.

Height:

Weight:

Head-length:

Max. width:

Min. width:

Horizontal circumference:

Other measurements:

Hair:

Complexion:

Skin:

Eyes:

Ears:

Palate:

Tongue:

Teeth:

Nose:

Expression:

Coördination:

Internal organs:

:

General History.

Heredity:

Predisposing causes:

Previous diseases or injuries:

Previous attacks:

Habits:

Education:

Exciting causes:

In the following table the forms of disease and number of cases of each is presented.² It is far from satisfactory, but indicates what kind of material we have had.

Forms of Disease.	Number of Cases.
Neurasthenia	41
Hysteria	7
Neurotic debility	54
Feeble-mindedness	65
Incipient melancholia	1
Simple melancholia	11
Hypochondriacal melancholia	1
Delusional melancholia	4
Recurrent puerperal melancholia	2
Traumatic melancholia	1
Melancholia agitata	1
Senile melancholia	3
Systematized delusional melancholia.....	1
Hysterical melancholia	1
Acute delusional insanity	2
Chronic delusional insanity	14
Hallucinosiis	7
Hallucinatory delusional insanity	2
Acute mania	1
Mild mania	2
Mania probably syphilitic	1
Recurrent puerperal mania	1
Climacteric psychosis	1
Folie à doute	1
Organic dementia	12
Senile dementia	2
Syphilitic dementia	2
Senile dementia and neuralgia	1
Senile involution	2
Dementia præcox	13
Phobia	1
Insistent ideas	9

² The thanks of the writer are due to Dr. A. C. Jelly for help in preparing this table.

Forms of Disease.	Number of Cases.
Fixed ideas	2
Impulsive acts and confusion	1
Simple depression	7
Recurrent depression	1
Post-traumatic depression	1
Hypochondria	11
Post-paralytic insanity	3
Confusional insanity	1
Epilepsy	20
Epilepsy and imbecility	5
Convulsions—hydrocephalus	1
Alcoholism	6
Delirium tremens	7
Chronic alcoholic-psychosis	1
Alcoholic or paralytic dementia	1
Morphine habit	1
Morphine and alcohol habit	1
Nervous instability from alcoholism.....	1
General paralysis	7
Tabes with mental symptoms	3
Senile tabes with mental symptoms	1
Somato-psychosis	1
All other cases	22
Total.....	372

It is impossible to compile perfect tables which will clearly show the condition of the patients treated in our mental clinic as, owing to the fact that so many of them are seen in the early stages, little more than mental instability or nervous weakness is apparent. However, we had to adopt some names for the symptoms that were found and so have made use of those in the table. The expression, "neurotic debility," is used for what might be called a minor degree of neurasthenia and indicates more than anything else that no very satisfactory diagnosis could be made. Often in these cases there were marked worries and fears and usually, depression; sometimes delusional ideas. It did not seem best, however, to dignify with a name anything

that did not have well-marked symptoms. For a more satisfactory name it would be necessary to refer to the more extended diagnosis that was given to each case on the record cards.

Of the patients treated a large proportion were foreigners, many belonging to the more recent classes of immigrants that have come to the country. Neurasthenic Russian Jews were common and a considerable number of Italian women were also in this condition. No doubt this is to be expected while the process of getting acclimated is going on, and also in many cases while the conditions under which they live make it impossible for them to get sufficient nourishment to sustain life on. It appears from our experience in the clinic that a serious question confronts our large cities in this matter of neurotic and neurasthenic immigrants. Will their children born in the early years of their residence in this country be defective because of the devitalized condition of the parents? It is hardly possible that such children should be as strong and rugged as they ought to be to sustain the struggle for existence which is almost too much for their parents. A further difficulty presents itself in treating these ignorant people, speaking a foreign tongue, who have been accustomed to live in a country in subjugation and have no idea how to socially regulate their lives in a free country like this. They do not fit in with the English-speaking people; they are not wanted in the hospitals and are a great tax to those who have to look out for them. When they break down mentally, because of their inability to understand what is said to them and from general ignorance, they are specially difficult subjects for appropriate treatment. It is a pity they cannot be sent out of the city to live a different kind of life, or back to their native land. At any rate our public authorities should realize that it is of the utmost importance to keep out of the country all immigrants who are in unsound mental, as well as physical, health.

Nothing that I have said indicates that we must of necessity separate the work of a mental from a neurological clinic. Often this cannot be done. There are, however, many cases where the mental side is the chief one. Take cases of general paralysis, for instance. The neurologist would at once say that they belonged in his department, but he would be making a claim which would not be wholly justified. It of course must be granted

that general paralysis is a disease of the central nervous system in which the neurons from lack of assimilation of nutritive material break down and die. Here we have perhaps the anatomical basis. I, for one, should be perfectly willing to classify general paralysis as a neurosis. On the other hand, however, what is the practical disposition of a case of general paralysis? In a large percentage of cases it of necessity goes to the insane hospital, and it goes there because of mental disturbance which makes it impossible to keep it at home, hence the paretic ranks as an insane man; is treated as one and dies as one, and there is no reason therefore why such a case, though one of disease of the nervous system should not be dealt with as a mental one. Theory and practice do not agree, and something similar might be said in regard to neurasthenia. This we might call a functional disturbance of the nervous system, but its symptoms may be largely mental and require mental treatment, and if they do there is no reason why suitable cases should not be treated in a mental clinic. It is an innovation perhaps to take away from the neurologists what they have been so long in the habit of regarding as belonging to their domain, but in the end of course, if they can see no scientific reasons to the contrary, they will be only too glad to give up what can be dealt with more satisfactorily elsewhere.

A mental clinic should strive to investigate a few cases thoroughly, keeping down rather than increasing its numbers, and a good deal of time should be spent on the consideration of the sociological factors. The psychiatrist must be a man, I believe, who is willing to take upon himself some of the duties of the parish priest, and not only know the physical conditions under which his patient lives, but the moral as well. He must be a humanist, patient and painstaking and willing to wait to solve problems relating to the inner life of his patient. The man of pure science can see only one side, just as on the other hand the philanthropist has only a limited outlook. It is a combination of some of the qualities of both which enable a man to most successfully treat mental cases.

For a long period it was asserted, and with some justice, that the treatment of insanity in large public institutions had much more to do with the providing of comfortable accommodation,

good food and clothing for the patient than anything else. The claim was made that scientific investigation was ignored and hence little progress could be made in the treatment of mental disease from the highest standpoint.

The narrowing effect of routine duties in a large hospital goes without saying. Little by little the hospital man becomes a routinist, unless by some means he is kept in touch with the world outside of the walls of the institution. Even if he happens to be broad and especially well equipped to investigate disease as it shows itself in the patients under his care, he sees one side of the question. One of the great benefits, I believe, of an out-patient mental clinic in a large city is that a physician gets a different comprehension of mental disease from that which comes to him in the hospital. He sees the various steps from the first of the attack instead of the final ones only, and this helps him to place mental diseases in the same category with others, and removes the mistaken idea from his mind he is apt to get that insanity or mental disease must of necessity receive treatment at an insane hospital. I have come to think more and more, as I have had experience with my own mental clinic, that there is a big field for the psychiatrist outside of the hospital.

I do not believe that mental clinics are going to interfere with neurological ones, and in the end I am certain that the two branches of what eventually may be one specialty will be brought into closer union. It has been the case that neither the neurologist nor the psychiatrist has quite appreciated the other's work, and while the neurologist has dug into his subject with pick-axe and shovel, the psychiatrist has been contented too often to follow along the old metaphysical lines of one hundred years ago. Matters now however must be reversed. The neurologist must turn to the mental aspects of the case coming under his observation and the psychiatrist must turn to the neurological side, and each must be more alive and sympathetic to all of the essential and underlying elements. I am confident that work undertaken in the mental out-patient department of a hospital or dispensary for the purpose of discovering how many cases there are and the best way to treat them is going to be an important means of understanding many things not before clear, and eliminating false ideas and inculcating correct ones about the relations of mental to physical conditions.

A GENERAL VIEW OF DEMENTIA PRECOX.

TRANSLATED FROM THE GERMAN OF KRAEPELIN BY

ALBERT E. BROWNRIGG, M. D.,

Assistant Physician, N. H. State Hospital, Concord, N. H.

We provisionally gather together under the term *dementia precox* a series of clinical pictures whose common characteristic is a termination in a peculiar weakened state of the mind. This unfavorable ending may not occur in every single case, but it is so exceedingly frequent that we had better for the present adhere closely to this general name. Perhaps other terms, as the *dementia primitiva* of Italians or the favorite expression of Von Rieger, *dementia simplex*, should still be employed. From the clinical and anatomical data at hand, I have no doubt that we have here to deal with a severe and, as a rule, at best a partial degenerative injury of the brain-cortex. Whether the disease process is the same in all cases must for some time yet be regarded as wholly uncertain.

From a clinical standpoint for the sake of clearness three principal groups of *dementia precox* may be considered separately. But these are certainly quite closely related to each other. These may be designated as the hebephrenic, katatonic and paranoid, respectively. The first is covered by the above-mentioned term, *dementia precox*; the second by *katatonia*; while the third includes *paranoid dementia*, besides those cases formerly reckoned as examples of *paranoia* which quickly lead to a considerable degree of mental weakness. The entire range of *dementia precox* in the above-mentioned disease-types represents essentially an "imbecile-making process." I suggest this different terminology, however, because general paralysis and senile dementia, as further examples of disease types, could certainly also with reason be included under the designation of "imbecile-making processes." (*Verblödungsprocesse*.)

The diversity of the pictures which we observe in the course of dementia precox is so very great that on superficial examination the evidences of inner relationships is often scarcely discernible. Nevertheless, we come across certain fundamental derangements more or less pronounced in all cases, and especially well marked in the terminal stages when the more accidental and transitory secondary symptoms are supplanted by the permanent and distinguishing changes in the mental life.

In dementia precox the simple *perception of external impressions* usually suffers no very serious impairment. As a rule, the patients comprehend very correctly what happens to them, and often far better than we would suppose from their behavior. One is astonished to find that an apparently completely stupid patient has observed correctly all possible particulars of his surroundings, suddenly knows the name of a fellow-sufferer, or notices a change in the clothing of his physician. Consequently, their *orientation* is for the most part unimpaired. As a rule, they understand where they are, recognize persons, and are clear about the reckoning of time. But in stupor and in profoundly anxious states the orientation may occasionally be much confused. Nevertheless, it is especially characteristic that these patients retain complete possession of their mental faculties often in spite of the most active excitement. On the other hand, the orientation is not seldom impaired by *delusions*. The patients point out fictitious houses and persons or give the wrong date, not because of inability to rightly perceive and reflect, but because their false ideas are more insistent than the points afforded by the true perceptions. It is not always possible, indeed, to get proof of this connection, as the patients frequently say nothing at all or intentionally make false statements.

Very frequently their information is greatly at fault on account of the springing up of *hallucinations*. These are hardly ever absent, particularly when the development is acute or subacute. Now and then they persist throughout the entire course of the disease. More commonly, after a while, they gradually diminish, only to appear again more vividly in the terminal stages. Hallucinations of hearing occur most frequently; next, those of sight and feeling—the sensation of things flowing through them, of being touched, and that of being influenced.

In the beginning of the disease the hallucinations are apt to be connected with disagreeable subjects and to seriously disturb the patient. Later, they are generally more calmly received, if we make exception of certain periods of transitory excitement. Many patients look upon these hallucinations as artificial productions—as a kind of play which is produced for them—and are much amused by them. Others, again, are not at all affected and when closely questioned usually give but little information concerning the content of their hallucinations. Ofttimes this little is entirely meaningless and incoherent. Thus, a patient, in other respects quite sensible and coherent, heard continuously sentences like the following, which give a good idea of their incoherence: "Then we ourselves can always hope that we shall be paid other thoughts. Then we are bound to know who is allowed to help us foolishly torture the sowhead to death. No, we are no longer so stupid and do not always fret about it when we are allowed to save the guzzling when we even act foolishly and are allowed to smear ourselves sowlike."

Consciousness in many instances remains intact. But in states of excitement and stupor it sometimes becomes clouded, and infrequently may appear, at first sight, to be markedly affected. On the other hand, the power of *attention* is usually greatly impaired. Often one may get these patients to pay attention for a short while, when they may not infrequently exhibit great confusion of ideas which a longer consideration of the subject dissipates. Above everything else, however, these patients are lacking in *interest*, and show a total lack of any tendency or inner desire to concern themselves with their surroundings. Although they perceive quite well what happens about them they take no notice and do not seek to learn or to understand. In very deep stupor or in advanced mental weakness it may even be wholly impossible to arouse their attention. On the other hand, when the stupor disappears, one may occasionally notice that they manifest a certain amount of inquisitiveness. By stealthy glances they watch what is going on in the room, follow the doctor from afar, peep through all doors standing ajar; but turn away when anyone accosts them or would show them anything. Apparently here the reawakened attention is restrained by the feeling that they must not use it (Negativism).

Memory is relatively little impaired. These individuals can, if they will, give a correct account of the details of their past history and often know to the exact day how long they have been in the institution. Their school-gotten knowledge occasionally sticks with astounding pertinacity even into the period of most profound imbecility. I myself remember a completely stupid young farm-hand who could readily point out on the map any given town; another startled me with his historical knowledge; others, again, solved with ease difficult mathematical problems. The ability to remember passing events is often quite well retained. Although quite frequently after profound stupor the patients recollect little or nothing of the events of a considerable period, it is generally easy to impress numbers and names upon even wholly apathetic patients and they will remember them correctly for days and weeks. Of course on account of the negativism one often receives evasive answers at first, but persistent questioning will make it plain that the patients remember the exercises very well.

Sooner or later, the *train of thought* is, as a rule, considerably disturbed. Except in stupor and in the confusion of the periods of excitement, in which we are unable to follow the mental processes, there usually occurs a certain increasing disjointedness in the expressions, as we have pointed out above in detail. In the milder cases this may show itself merely in a pronounced habit of wandering off the subject, and making irrelevant remarks, in disconnected transitions from one subject to another, the insertion of superfluous expressions and digressions. In the graver cases, however, *confusion of speech* (*Sprachwirrtheit*) not infrequently develops with complete loss of all coherence and the coining of new words. Of course it must be admitted that the proper sequence of ideas may probably be deranged much less than appears to be the case, as the patients under some circumstances not only comprehend well, but also are able to make further use of these ideas and can conduct themselves in an orderly manner. Moreover, in their train of thought we almost always find indications of *stereotypy*, of being addicted to peculiar forms of expression, which may occasionally so completely dominate the thinking powers that for weeks and months the same meaningless expressions constantly recur. We also frequently

observe the inclination to rhyme, to repeat senseless sounds, to violently play upon words.

In every case the *judgment* is greatly deteriorated. As soon as these individuals attempt to follow their accustomed paths of duty, and something happens to call forth fresh decisions, they are apt to get into difficulties. They no longer comprehend clearly what is happening about them, do not grasp the state of affairs, do not reflect, cannot draw inferences and see no objections. Consequently, they generally have an altogether erroneous conception of their circumstances and position. When, as not infrequently happens, there is present a certain realization of the changes that the sickness has produced in them, they usually still lack any complete understanding of the gravity of their affection, and of the far-reaching consequences which will change their whole future.

Quite frequently there arise on this basis, transitory or continuous *delusions*. In the first stage of the disease these are apt to be of a rather sad content, hypochondriacal, with ideas of having sinned and of being persecuted. Later on, there are often associated with these ideas of grandeur which may completely eclipse the former. All these delusions, as a rule, soon become senseless and fantastic, apparently because of the rapid development of mental weakness. Besides, these delusions are not uniform, but change their character more or less rapidly by the addition of new ideas. Sometimes, in spite of certain more permanent features of the delusions, the patients add almost every day fresh details, and are easily influenced by suggestion to form any false conception one wishes. In the great majority of cases these abnormal mental pictures, which in the beginning are often very elaborate, gradually disappear entirely. For the most part, certain delusions still remain for some time without further elaboration; or they may recur from time to time; or finally, may be permanently and completely forgotten. Only in that syndrome, which we class as the paranoid form, do the delusions persist for a longer time, but even here they always become more confused and disconnected.

As a rule, very striking and profound disturbances occur in the *disposition*. In the beginning of the disease a sad or anxious mood occurs with extraordinary frequency, sometimes accom-

panied by active excitement. Somewhat less frequently there are periods of uncontrollable merriment with long continued unbridled laughter. But of far greater importance than these transitory states is the more or less pronounced form of good-natured imbecility which is always in evidence and which forms the distinguishing feature of the whole course of the disease. The lack of interest in their surroundings already mentioned may be recognized as an indication of this general disturbance, in so far as the inner motives for the exercise of their attention are clearly made evident by their feelings. The peculiar apathy of the patients in the face of their other mental relations, manifested by an extinction of affection for relatives and friends, loss of satisfaction in activity and business, in recreation and pleasure, is not seldom the first and most striking evidence of incipient disease. Even when the expressive movements are going on, these patients no longer experience true joy or sorrow; they harbor neither desires nor fears, but spend their days apathetically, at one time stupidly brooding by themselves, at another causelessly cheerful. They often appear to be indifferent to physical suffering; they endure uncomfortable positions, pin-pricks, or real injuries without making much fuss. Food, however, often exerts for a long time a particular attraction. These patients will often receive a visit from their relatives without greeting them or showing the least sign of affection, but will hurriedly search their pockets and baskets for food which they forthwith devour with wide-filled cheeks until the last piece is finished. Besides, in the terminal stages of the disease, complete apathy in the presence of all their surroundings is the leading feature of the clinical picture. Quite often this may be accompanied by a certain irritability which is generally noticeable at times, but more rarely may remain continuously.

In company with this profound change of disposition are observed those manifold morbid symptoms from the realm of *conduct* and *action* which are so far-reaching in their effects and which generally give to the whole picture its characteristic stamp. The usual cause of these symptoms appears to be a lessening of the *will-power*, which indeed in the terminal stages completely disappears. The patients lose all inclination for activity and employment; they sit around idly, and neglect their obligations,

although they may still be in a position to act upon suggestions from others in an orderly manner. Besides this inability for independent work, there may be developed a more or less pronounced desire for movement, which may last a long time or be transitory and, under some circumstances, may increase and amount to a furious mania. But even in these instances, as we have already mentioned, we have to deal not with an increase of the will-power, but only with a motor excitement. These movements have no definite object, but are the purposeless expressions of an inner agitation.

Indeed, in this excitement, the impulse for movement usually readily culminates in action. These patients will suddenly smash windows, thrust their legs through the bars, overthrow tables and chairs, hurt themselves, make strenuous efforts at suicide. All such senseless actions are apt to be carried out all of a sudden with great violence, and with lightning speed, as soon as the impulse thereto arises. The patients do not have any reasonable motives for this conduct; they act impulsively, without giving any explanation of the object of their doings, even when they try to account for them afterward. This incapability of suppressing the impulses that arise, occurs not only during the period of excitement but frequently also even in the stupor of dementia precox. The instances last referred to are dominated by the appearance of a resistance to volition. Each desire is immediately extinguished by a still stronger opposing impulse. In this way originates the symptom of *negativism*, which in its varied forms is met with here continually. Among these are included the stubborn opposition exhibited by the patient to every change in his condition; the refusal of food or clothing, the shutting of the eyes, the turning aside of the head, and the evasive way of speaking; the retention of fæces, urine, and the saliva; the creeping under the bed-covering; the disinclination to use any bed; the mutism, the invention of senseless answers, the abrupt cessation of movements and actions already begun, the habit of being proof against all requests and interference. The manner and degree of the negativism vary quite frequently, and are seldom affected by external influences. By an inner impulse and wholly without apparent cause it can be interrupted; so that the patients, immovable till then, may suddenly with the greatest

energy and rapidity commit some senseless act, and then, perhaps as suddenly, subside into their former state.

Frequently, however, these impulses, when once displayed, do not disappear immediately but are repeated over and over again for an indefinite time. Hence originate all those manifold *stereotyped movements* and attitudes such as characterize the odd picture of *katatonia*; hence also come the *verbigeration* and the *mannerisms*, of which at least the majority are nothing else than familiar actions slightly modified by the disease. The breathing, speech, writing, attitude and gait, the manner of clothing and unclothing themselves, the handshaking and manner of eating, the various other gestures, are all carried out in an unusual and unnatural way, but are distinct and interrupted by all sorts of secondary impulses. In spite of the most varied individual differences, these always have a certain tendency to recur, and in the same patient may often persist with great tenacity for from one to ten years. They will be described later on in detail.

Lastly and intimately connected with the severe damage to the will-power and the failure of the natural impulses to act or inhibit action, we have the picture of *automatism* in carrying out orders, which is a very frequent symptom in dementia precox. Thus, in the advanced states of weak-mindedness, these patients, as a rule, are not only tractable, so that they form the main body of every group who submit willingly to the monotonous daily routine of a large institution, but in individual cases they show signs of a heightened susceptibility. In a large proportion we observe *echolaly* and *echopraxy*, either temporarily or until a fatal catalepsy supervenes. To be sure the expression of these disturbances frequently changes, but there are few patients with dementia precox who never exhibit one at least of these symptoms at some period of their sickness.

Their *ability to work* is without exception greatly impaired. They need constant urging; they hesitate before every little difficulty; they cannot accommodate themselves to altered circumstances. One of my male patients, who under supervision transcribed rapidly and well as long as one wished, was totally unable to attend to the marks for insertions but, in spite of previous instructions, always copied exactly what was written before him. Others are in a condition to repeat with great exactness

work previously practiced, but fail immediately whenever new tasks are assigned to them. In this way often occur the characteristically peculiar performances, the handiwork and the drawings, in which, besides the indications of technical skill, there is apparent the loss of the sense of the beautiful and the inclination for the ridiculous. In the same way there usually appears in their musical performances a decline of their artistic sense, sometimes evidenced by their lack of expression, at other times by their erratic and capricious productions.

In connection with these disturbances of the mind must be considered a group of symptoms referable to the body. Their exact relationship with the underlying disease is not yet fully understood. In this connection in the first place must be mentioned those seizures which have already been very well described by Kahlbaum and Jensen. These include for the most part *fainting fits* and *epileptiform convulsions*, which appear sometimes at long intervals, at other times more frequently. More rarely there occur *cramps* affecting certain groups of muscles (the face or arm), *tetany*, or even *apoplectiform* fits with somewhat long continued paralysis. Several such instances are on record. I myself once saw a severe collapse with convulsions of the left half of the body and of the right half of the face. Not so very seldom such an attack may be the first symptom of beginning disease. Thus I saw among others an elderly student, particularly gifted from his youth up, who suddenly fell into a deep coma from which he recovered only very gradually. Except for slight difference in the pupils, facial phenomena, and an increase in the reflexes there was no evidence of brain involvement. Yet this patient when I examined him some weeks later afforded the characteristic picture of premature weakmindedness, which still exists to-day. All these attacks are nearly twice as frequent in women as in men. According to my grouping, they happened in about 18 per cent of all cases.

But in a large group of patients, convulsions and fits had already occurred in youth, and in such cases it must remain doubtful whether any connection exists between those attacks and the mental disturbance.

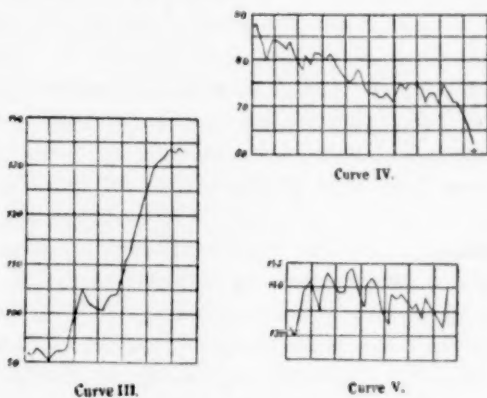
Finally, there are often observed *hysteroid convulsions* and *paralyses*, *aphonia*, *hiccough*, sudden *rigidity*, localized *tonic contractions*

and so forth. There frequently exist for a long time peculiar *choreiform movements* which in my opinion can most appropriately be designated by the term "athetoid ataxia." In two cases it was possible to discover undoubted aphasic disturbances during a period of mental dullness. The patients were unable to recognize and name articles placed before them, although they were able to speak and evidently exerted themselves to the utmost to give the wished for answer. Repeatedly, after prolonged thinking, false terms were given. This disturbance disappeared after a few hours.

The *tendon reflexes* are constantly exaggerated, often indeed markedly so. Increased *mechanical excitability* of the muscles and nerves also repeatedly occurs. The *pupils* are often widely dilated, for instance, in the stages of excitement. Now and then one observes distinct, though variable, differences in the size of the pupils and also a restlessness of the eyeballs. Again, there are widespread *vasomotor disturbances*, *cyanosis*, *circumscribed oedema*, *dermatographia* in all degrees, while in certain cases profuse *sweating* occurs. The secretion of *saliva* appears to be frequently increased. Thus I was able to collect 375 cc. (12.5 fluid ounces) of saliva from one of my patients in six hours. The *action of the heart* is subject to great variations, at one time being slowed, more frequently somewhat quickened, often even weak and irregular. The *bodily temperature* is mostly subnormal; once I have seen it decreased to as low as 33.8 C. The *menses* usually are absent or irregular.

Very often I have observed diffuse enlargement of the *thyroid gland*, with, in some instances, the shrinkage of such enlargement immediately before the first onset of the morbid symptoms, and repeated rapid variations in the size of the gland during the progress of the affection. In certain cases *exophthalmus* and *tremor* were present. Finally, it dawned upon us that the relatives of the patient quite frequently had myxœdematous thickening of the skin, for instance, that of the face. Considering the frequency of cretinoid indications it is unfortunate that these cases are not in the beginning turned to better account by us. Very frequently there appears to exist the condition of *anemia*, sometimes *sugar* is found in the urine, and sometimes there is *polyuria*.

Throughout the development of the disease, the *sleep* of the patients is frequently disturbed, even though they lie quiet. The *appetite* fluctuates from absolute refusal of food to the greatest gluttony. The *body-weight* usually diminishes, often very markedly and even to the utmost emaciation and in spite of a most generous diet. On the other hand, later on, we observe a very extraordinary and generally sudden increase, so that the patients in a short time get an extraordinarily well-nourished or even bloated appearance. Of the charts here reproduced, the first exhibits the curve of the body-weight in the ordinary progress of katatonic stupor ending in mild dementia. Although a



Curves produced by fluctuations in the body-weight in the course of dementia precox.

mild grade of excitement followed the awakening from the stupor, the weight still continued to increase very markedly. Chart IV belongs to a woman who, in spite of the most careful nursing and a generous diet, and without a sign of organic lesion, died in a state of most extreme marasmus. Finally, Chart V shows a series of pretty regular fluctuations in the beginning of katatonia. Every once in a while a change between stupor and greater clearness was effected. Later on, these regular fluctuations disappeared and permanent imbecility ensued.

In a detailed clinical description of the wide domain of dementia precox we encounter considerable difficulty if we try to

classify the various forms on a strictly scientific basis. There is presented a whole series of frequently recurring types which differ so widely from each other that, in spite of every effort, it appears at present impossible to finally assign each to its proper class. The grouping attempted above has, therefore, no other value than that of being easily understood. It is, indeed, possible that more exact knowledge of the nature of dementia precox will afford us an entirely new point of view for the clinical arrangement of the cases.

EXPERIENCE WITH CHLORETONE.¹

By WM. RUSH DUNTON, JR.,

Assistant Physician, Sheppard and Enoch Pratt Hospital, Towson, Md.

So much has been written in favor of chloretone and our recent experiences at the Sheppard Hospital have been so much out of harmony with those of others, that I have thought it well to report them at this meeting in the hope that either the profession will be warned against the use of a dangerous hypnotic or that further investigation will show that it is much safer than we have been led to suppose. American observers generally have reported very favorable results with chloretone. Reynold Wilcox (1) has spoken of it as an almost ideal hypnotic. Dr. Arthur Stevens (2) and Dr. Percy Wade (3) have also written in praise of it. The observations which follow are entirely clinical and have not been corroborated by any laboratory physiological tests. We began to use the drug last June in three-grain tablets, giving at first two and occasionally running the number up to five. On one or two occasions this dose was repeated. In all 20 patients were given chloretone. Eleven of these received several doses, but its power as a hypnotic being apparently weak in their cases, resort was made to other drugs, such as chloral, hydrobromate of hyoscine, etc., which produced better results. The other nine patients were given chloretone over quite long periods of time and it was in them that the bad effects were generally observed. One, however, took it for a long time without giving evidence of any bad symptoms which could be directly attributed to the drug. In the other eight patients, however, so serious a condition was noted at times that we have discarded the use of chloretone entirely and now rely on other hypnotics.

¹Read at the April, 1901, meeting of the Medical and Chirurgical Faculty of Maryland.

Below will be found the notes belonging to each case:

Case I.—Woman, aged 67; chronic melancholia. From July 6 to September 8, 1900, she was given 456 grains of chloretone in doses of six or nine grains. On August 30, her left foot was swollen and painful. On September 7, her speech was thick for a day or so. From October 7 to 19, there was a good deal of vomiting. Albumin was present in the urine from September 18 to October 5. Since then none has been found. The heart sounds at the present time (April 24, 1901) are apparently normal but very faint. She has several purpuric spots on her hands and her hair has fallen out to a very great extent.

Case II.—Woman, aged 34; acute melancholia. From December 11, 1900, to February 6, 1901, she took 870 grains of chloretone in 15-grain doses at bedtime. A note of January 10 says that the patient had not been doing well and the ankles were found to be swollen. The œdema subsided after the patient was made to keep her foot elevated.

Case III.—Woman, aged 50; chronic melancholia. From October 5, 1900, to January 10, 1901, she took about 800 grains of chloretone in 10-grain doses at night. On October 25, there was considerable œdema of the right leg, with slight swelling and pain in the left. There was also a slight rise of temperature. After a couple of days in bed the swelling subsided, but recurred in the right leg whenever it was not kept elevated. On January 11, 1901, the patient was very drowsy, with eyes nearly closed. The face was puffy, especially under the eyes. The abdomen was full, the walls being rather tense. There was considerable mental inhibition. The heart on admission showed a harsh blowing murmur with the first sound, transmitted as far as the anterior axillary line, heard over the body of the heart and in the aortic interspace. The second sound was sharp and clear. On leaving the hospital April 3, 1901, her heart was in much better condition than on admission.

Case IV.—Woman, aged 24; a drug *habituée* requiring large quantities of hypnotics to secure sleep.

On December 10, 1900, she began to have diarrhœa which was thought to be due to the stoppage of morphia. From December 15, 1900, to January 30, 1901, she had 17 doses, each consisting of 15 grains of chloretone, or a total quantity of 255 grains. On

January 21, her abdomen was distended; on February 1, there was dyspnœa caused by abdominal distension; on February 5, the legs were œdematous; on February 7, the patient vomited blood; on February 9, both parotids were swollen and the abdomen was greatly distended, causing much dyspnœa. She was put on tincture of digitalis and whiskey (℥ x to ʒ i) every four hours, which caused such improvement that when seen by Dr. Thayer, February 14, she was much better though still in a serious condition. Dr. Thayer was unable to find any lesion sufficient to cause such marked symptoms. The digitalis and whiskey were stopped as the effects were becoming apparent. Her diarrhœa persisted until about the middle of February. Of her heart Dr. Thayer noted as follows: "The action is slow and somewhat irregular. The first sound is strong and followed by a soft systolic murmur which is heard throughout the axilla. Passing inwards the murmur becomes less intense, but becomes much louder in the pulmonic area and is also well heard in the aortic area. Both second sounds are of good intensity and there is no special accentuation of the pulmonic second. The murmur is heard over the manubrium and faintly in the carotids. The pulse is of moderate size, 13 to the quarter of a minute, somewhat irregular and of moderate tension.

The note of April 24 says that the cardiac murmur was still present; the pulse was 80 to the minute, weak and of low tension. The patient was in pretty fair physical condition, but her hair was falling out quite rapidly.

Case V.—Woman, aged 25; acute melancholia. At irregular intervals from December 19, 1900, to January 26, 1901, she took 360 grains in 15-grain doses at bedtime. On January 20, she was not so well and remained in bed and kept her room for ten days. There was a slight rise of temperature and marked swelling of the face which persisted for a week; also slight œdema of the legs, especially on the right side, loss of appetite, photophobia and free diaphoresis. This patient complained of a queer feeling in her head and at times said she could not hear well. The drug was discontinued and her symptoms subsided in a few days.

Case VI.—Woman, aged 42; chronic mania. This patient was untidy, obscene and malicious. On January 10, 1901, she was

put on one 5-grain chloretone tablet three times a day. Ten days after, having taken about 150 grains, she asked to have the medicine stopped as it made her feel so badly. She said that it made her drowsy and that she was unable to stand up. This last complaint was unfounded. There was considerable swelling about the eyelids and cheeks. Four days after the chloretone was stopped she was feeling ordinarily comfortable. She left the hospital March 10, 1901, apparently well.

Case VII.—Woman, aged 42, suffering from chronic neurasthenia. At times when very much run down she would have attacks of mental excitement. From August 20 to December 21, 1900, she took at very irregular intervals 67 doses of chloretone, consisting of nine or fifteen grains, the total amount being 856 grains. On December —, she began to show some abnormalities and we thought she was on the verge of one of her attacks of excitement. Instead of this, however, she became confused, gradually sank into coma, and died on December 27. As early signs a presystolic murmur and increasing abdominal distension were noted. At the autopsy the vessels of the brain were very prominent; there was slight arteriosclerosis of the aorta, and a fibrous myocarditis; the mitral valve was retracted, thickened and soft; the liver was fatty; the bladder was enormously distended; red hepatization of both lower lobes of the lungs, an acute splenic tumor, and cloudy swelling of kidneys were also noted.

Case VIII.—Woman, aged 22. Probably suffering from dementia præcox. She took chloretone from June 30 to September 26, 1900, irregularly, the total amount being 396 grains. No unfavorable symptoms presented themselves until March 27, 1901, when at her menstrual period it was found that she had an intermittent pulse. Examination of her heart showed as follows: "The systolic impulse is very powerful and lifts visibly the whole præcordial area. The cardiac dullness is not increased. There is no thrill. On auscultation the intensity of the cardiac sounds and disturbed rhythm are the notable features. The predominating rhythm is one in which there is a loud thumping, booming first sound with a high pitched musical tone, followed immediately by a duller, less intense second sound, which is clear or but slightly slurred; this in turn is succeeded immediately by a

second systole of greatly diminished intensity and much less musical than the first and second sound which is loud and slurred, or reduplicated, following which there is a pause of nearly twice the normal length. The pulse is not especially delayed, is of fair tension and volume. At the base of the heart, in the pulmonic area, the first sound is followed by a low smooth murmur which is not made out in the aortic area, or in the axilla, and is heard very faintly at the apex. The murmur is of maximum intensity in the aortic interspace and is probably hemic."

After taking digitalis and whiskey for a few days her pulse became regular but weak, and at the present time (April 23, 1901) every third beat at the wrist is weaker than the others and is followed by a slightly longer interval.

Case IX.—Woman, aged 36; recurrent mania. From November 2, 1900, to February 20, 1901, she took about 1100 grains of chloretone. She has shown no symptoms which could be traced to the drug. This, however, is the only case in which chloretone was given continuously in which it did not apparently cause some bad effects. The patient left the hospital April 3, 1901, with the heart in perfect condition.

All the patients complained of feeling dull while they were taking chloretone. Of the patient who had albuminuria at the end of the period I am not prepared to say whether this was a *post-hoc* or *propter-hoc* condition. I do not think, however, that chloretone has any marked effect on the kidneys since albuminuria was noticed in no other of our cases and no record of the condition is to be found in the writings of other observers. Nevertheless, it is worthy of mention that there was cloudy swelling of the kidney in the case of the patient who died. It seems to me that the main action of the drug is exerted upon the heart and that it is of a depressant character.

The men who have been responsible for placing chloretone on the market as a hypnotic are Houghton and Aldrich (4), the latter of whom worked with Dr. Abel and conducted a number of experiments before publishing his views as to its action. Houghton and Aldrich claim that chloretone does not depress the heart's action and that its exhibition is rarely followed by disagreeable after-effects. They do not state, however, what these after-effects are.

Arthur A. Stevens (2) says that chloretone rapidly loses its effect if given continuously. This did not hold good for our cases. A tolerance seems to be established but rather slowly. Stevens says that chloretone seldom causes any ill effects either upon the stomach, heart or general condition.

Wade (3) speaks most favorably of chloretone and reports 20 cases in only two of which it proved to be without value. In several cases, however, he says fifteen-grain doses had no effect but when larger amounts were given favorable results were obtained. He gave much larger doses than I did, but less frequently repeated and for shorter periods of time.

Dr. John Abel tells me that several years ago, shortly after he introduced chloretone into laboratory work, it was administered several times as a hypnotic by Arthur Oppenheimer. The results were not favorable, alarming symptoms being produced in a patient with angina pectoris.

Dr. Abel says that he himself is most strongly opposed to the use of chloretone as a hypnotic for human beings. For dogs used in physiological experiments it works very admirably as the animal remains in a dull stuporous condition until it has time to recover from the wounds so that there is no interference with the experiment. The animals experimented with were dull and lethargic to a much greater degree than any patients observed in this hospital.

The following conclusions from an article entitled, "Le Chloretone," by Dr. E. Impens, in the *Archives Internationales de Pharmacodynamie et de Thérapie* (t. VIII, fasc. I & II), are somewhat startling:

"1. The quotient of toxicity of chloretone, in warm-blooded animals, is from 1 : 1.76 to 1 : 1.68, while for chloral hydrate it does not exceed 1 : 4.32. Chloretone, therefore, is $2\frac{1}{2}$ times as toxic as chloral hydrate.

"2. With a very small dose and at the beginning of its action, chloretone is without influence on the frequency of respiration, but it diminishes the amplitude of the inspirations. With a medium dose it is capable of producing a deep narcosis, reduces the total volume of air inspired per minute 70 per cent; the volume of individual inspirations 60 per cent, and frequency 40

per cent. It diminishes, therefore, considerably the pulmonary aëration.

"3. Chloretone paralyzes vasomotor centers and leads to a marked dilatation of the vessels. This is followed by a notable fall in the blood pressure—a fall of about 43 per cent with a barely efficacious dose.

"4. The vasodilatation is not the only cause of this lowering of the arterial pressure. Chloretone has at the same time a paralyzing effect on the heart. In small doses this action is slightly less marked than with chloral hydrate, but with a dose sufficient to produce any pronounced hypnotic effects, it is quite as apparent.

"5. Chloretone narcosis, with the smallest effectual dose, is accompanied by lowering of the temperature to below 34.5°C . in the rabbit. This fall in temperature is due not alone to the increased caloric radiation, but also to a direct paralyzing action on the cellular protoplasm.

"6. This influence on the protoplasm is again clearly shown by the marasmic condition in which the animals remain even for a considerable time after waking.

"Finally, experience undoubtedly shows that chloretone restricts the combustion of oxygen more than 50 per cent. It is therefore clearly evident that the respiratory function of the protoplasm is interfered with.

"7. In one respect, however, chloretone is superior to chloral hydrate. It is less irritating and has some slight anæsthetic properties. Nevertheless, this fact should not enter into consideration in view of the high degree of toxicity of the drug and of its injurious effects not only on the cardinal functions of the organism but also on the protoplasm itself.

"We are justified in stating then that chloretone is a dangerous narcotic, much more dangerous than chloral hydrate."

The well-known effect of the chlorine compounds in causing fatty degeneration should also be borne in mind. Recently several articles condemning its use as a hypnotic have appeared in the *Hungarischer Archiv für Inner Medicin*, which, unfortunately, I have not been able to consult. On the whole, however, it would seem that in the present state of our knowledge a good deal of caution should be exercised before this drug is put into general use.

LITERATURE.

1. Wilcox, Reynold Webb: Recent Advances in the Treatment of Insomnia, Medical News, Vol. LXXVI, April 14, 1900.
2. Stevens, Arthur A.: A Clinical Report on the use of Chloretone as a Hypnotic, New York Medical Journal, Vol. LXXIII, p. 327. Feb. 23, 1901.
3. Wade, Percy: On the use of a new, safe and efficient Hypnotic in the Treatment of the Insane: Chloretone, Jour. Nerv. and Mental Disease, p. 447, N. Y., 1900.
4. Houghton, E. M., and Aldrich, T. B.: Chloretone: A Hypnotic and Anesthetic, Journal of the American Medical Association, Vol. XXXIII, p. 777, Sept. 23, 1899.

SCHOOLS FOR THE INSANE.¹

By FRANCIS M. HAMLIN, M. D.,

Late School Teacher at the Willard State Hospital, Willard, N. Y.

[Francis Marion Hamlin was born in Owasco, N. Y., January 11, 1841. He attended the district school near his home, and soon mastered all that was taught there, and was sent to the academy at Red Creek, N. Y. After completing the course he taught in the school. In September, 1863, he entered the Fort Edward Institute, and graduated with honors in July, 1865. He then began the study of medicine, and in September, 1866, matriculated at the College of Physicians and Surgeons, New York City. He applied himself with such diligence that his health failed before the close of the year and he returned home. He was never robust, and all his life suffered after mental over-exertion. In 1867 Dr. Porter, of Skaneateles, directed his studies, and in December, 1868, he graduated from the Albany Medical College. He did not confine himself to medical research only : he was an expert microscopist, naturalist and botanist. Soon after graduating he opened an office for general practice at Union Springs, N. Y. But wishing to make mental and nervous diseases a specialty, he accepted a place on the staff of the Government Hospital for the Insane of Washington, D. C., where he remained until the autumn of 1878. His health failed and he was obliged to rest for a long time. He spent three winters in Bermuda, where he became greatly interested in the study of conchology. He made an extensive collection of land and sea shells, and wrote a history of the fauna of these islands. During the last few years of his life Dr. Hamlin was in charge of the school for patients at the Willard State Hospital, Willard, N. Y. He died there March 11, 1900, of tuberculosis and chronic nephritis. The impressions he gained from his work are revealed in the following paper, which is a valuable contribution to an important subject in one of the by-ways of medicine and upon which very little has been definitely written. For the preservation of the manuscript and the opportunity for its posthumous publication we are indebted to the *Albany Medical Annals* and to the medical officers of the hospital.]

In the January number of the *British and Foreign Medical Review* for 1845, that great philanthropist and alienist, Dr. John Conolly, writes as follows :

¹ Read at a meeting of the Willard State Hospital Medical Society, November 9, 1898.

"As the institution of schools in the Hanwell Asylum has been a favorite object of my ambition, but one in which my hopes have been frustrated, in consequence of their suppression by an authority, which I have no power of resisting, it was not without the most singular gratification that I beheld Dr. Falret sitting among his patients, like a father among his children, encouraging them, assisting them, directing them, and promoting all kinds of easy and agreeable intellectual exercises, that might diversify the time for the afflicted objects of his care and by gentle efforts lead perhaps, in not a few cases, to the gradual restoration of those powers with the loss of which all is lost that is worth preserving.

"The tranquillity, the content, the cheerfulness of that little room, I shall never forget ; and I trust that the hope such a spectacle inspired of being some day aided in a like attempt among the insane of my own country, will yet be realized before my mortal labors are concluded."

The good doctor then goes on to describe more in detail what he saw in those two great and historic institutions of France, the Bicêtre and Salpêtrière, which are so closely associated with the names of Pinel, Esquirol, Falret and others whose deserved renown in redeeming the insane from their apparently hopeless fate is imperishable.

The idea of teaching the insane seems to have grown out of the efforts to teach idiots, they and the insane both being confined in each of these great institutions.

Leaving the Salpêtrière, Dr. Conolly says : "The first part of the Bicêtre to which I was conducted was a school exclusively established for the improvement of these cases [the idiots] and of the epileptic, and nothing more extraordinary can well be imagined. No fewer than forty of these patients were assembled in a moderate-sized school-room, receiving various lessons and performing various evolutions under the direction of a very able school-master, M. Seguin, himself a pupil of the celebrated Ward, and endowed with that enthusiasm respecting his occupation before which difficulties vanish."

It is hardly necessary for me to say, I suppose, that this enthusiastic teacher just mentioned is the Seguin who became so justly celebrated afterward for his efforts in behalf of the idiotic in our own country.

Again Dr. Conolly says : "The efforts of M. Falret at the Salpêtrière, for the instruction of the insane, already spoken of, began in 1831 by the establishment of a school in that institution for idiotic females."

It was the continuation of that school which Dr. Conolly first visited and described. Of the school in the other great institution he says :

"The schools for the insane patients of the Bicêtre, who are neither idiots or epileptics, exceed in interest, if possible, those of the Salpêtrière. Male patients are better prepared in general than female patients to derive benefit from such instruction; they are also more attentive, and perhaps, more able to receive various instruction. Here, too, as in the school at the Salpêtrière, the most cheering thing of all was to see the evident comfort and happiness created by the various and not fatiguing occupations of the schools; to witness the satisfaction with which the afflicted, the paralyzed, the utterly incurable exhibited in the performances which they yet retained the power to accomplish. If no other end were answered by the formation of schools, they ought to be established as recreative, palliative, remedial even, in every lunatic asylum."

The pathetic utterance, almost prayer of Dr. Conolly, that he might see such schools established in his own country, appears to have been heard, for Dr. Ray in his article "Visits to the Principal Hospitals for the Insane in Great Britain, France, etc.," published in the *AMERICAN JOURNAL OF INSANITY* for April, 1846, says:

"In a few of the English establishments, some attention has been given to the instruction of the patients, especially at Hanwell (Dr. Conolly's institution) whose chaplain made the discovery, two or three years since, that 'patients who are unable to read, can be instructed in the alphabet and spelling.' I did not see any of their schools in operation, and know nothing more about them than I learn from the published reports.

"At St. Yon, the Bicêtre, and the Salpêtrière, schools for instruction in the rudiments of learning form part of the ordinary routine of moral treatment. In the school at the last named hospital, which I had the pleasure of seeing once with M. Batelle,

and subsequently with Dr. Falret in the course of his morning visit, the exercises consisted of reading, writing, recitations of pieces committed to memory, and singing, individually or collectively. In the meantime most of them pursued their customary employment of knitting or needlework. Many a countenance beamed with pleasure, and an air of quiet and cheerful interest pervaded the whole school.

"The superior docility and flexibility of the French character, permit the use of school instruction in their hospitals, for the insane, to a much greater extent than would be possible, I think, in ours. Still, in all of them, instruction of some kind or other, may be profitably introduced, for there is time enough that can not be occupied in any other way, and patients enough who, from disinclination to labor, or a desire of change, would be gratified with the employment.

"Young patients, particularly, can not spend a portion of their time more pleasantly and profitably, than in the school-room. For those of more cultivated minds, familiar lectures on scientific subjects, plentifully illustrated by figures and diagrams, may appropriately take the place of elementary instruction.

"Dr. Brigham, of the Utica Asylum, and Dr. Earle of Bloomingdale, have taken some pains to employ their patients in this manner, and they represent the result to have been highly satisfactory. Indeed, nothing is to be despised which relieves the tedium of confinement without carrying the mental excitement, it may occasion, beyond the healthy point."

Dr. Brigham, the editor of the *JOURNAL OF INSANITY* and Superintendent of the Utica Asylum, in introducing the article of Dr. Conolly's relating his experiences at the French schools, says:

"We have three schools for the men, one of which has been managed for the past six months wholly by a patient, the others by a teacher, hired for the purpose.

"We have one school for the women, which is conducted by a hired instructress.

"The schools commence at ten in the morning and at two in the afternoon, and continue about one hour. They are opened and closed by singing a hymn by the pupils.

"In all good order prevails, and many of the patients have made great proficiency. Several inclined to be discontented,

have been made far less so by attending school, and a considerable number who were already in a demented state, or fast approaching it, have improved in mind, and become interested in learning."

After all these encomiums from such great men as Conolly, Ray, Earle, Brigham, and others whom I have not mentioned, it would seem mere supererogation to say more in behalf of schools for the insane. It is only when one stops and thinks how few such schools there now are that one asks why this change. On a little reflection I do not think the cause difficult to find.

Times have changed. These great men were able to give the schools their personal attention; and one can easily imagine that "Dr. Falret, sitting like a father among his children," to use the language of Dr. Conolly or Dr. Earle, whose mere presence was almost a benediction, would secure, with his great knowledge of his afflicted pupils, better results than a mere lay-teacher, be he ever so faithful.

Hospitals have grown larger and the very men who should be best fitted to teach a school of such pupils, the physicians, are, from their numerous and onerous duties, least able to attend to it and they must necessarily relegate it to the care of others.

Times have changed. When these schools began they followed close upon the great awakening to the condition of the insane, to their neglect and the cruelty of their treatment, and it is not surprising if the pendulum of public opinion swung too far the other way; not that they could receive too much kindness, but rather that too great results were expected from that kindness.

Times have changed, and it would also seem as if the character of disease had changed too. It would seem as if more people were stricken with an incurable ailment from the first; that the percentage of recoveries is less than it was fifty years ago and that no method of treatment whether medical or moral, is as hopeful as then.

No doubt this particular method was carried to a degree not warranted by any just hope or expectation, for I read of some instances where apparently the whole number of patients in the asylums must have been under instruction, three or four hundred being assembled each evening for mental improvement.

The picture has been colored too highly, the hues are too rosy, according to my experience, and some of the things which I find seem to me quite curious. Of these I may mention the fear of wearying or exciting the patients.

This led to exceedingly short sessions, one hour, and to accomplish anything much in such a short time too much haste, in my opinion, must have resulted, and little of good was obtained.

Dr. Ray's ideas that the French, as a people, were more amenable to such treatment than ours are and that men are better fitted to profit by it than women, are, I think, without foundation. In regard to the latter, I should say the direct reverse was the case.

But the gravest error in my estimation is the idea that the principal object of the school was the imparting of instruction and the measure of its success was the degree of knowledge obtained.

In my opinion the chief objects to be sought for in such a school are *self control* and *concentration of thought*.

We all know how intensely egotistical most of the insane are, how prone each is to thrust himself forward to the exclusion of all others. If I can get such an one to hold himself in abeyance, to think and talk of something else than his woes, his griefs or joys, I shall have done him a greater favor than to teach him to do a sum in arithmetic.

We all know how difficult it is to secure any continuous thought on any subject, except the morbid, dominant thought.

If I can secure concentrated and continuous thought on some assigned, wholesome topic, I shall have done such an one a far greater service than to teach him to parse a sentence.

It is true he can neither do the sum nor parse the sentence without forgetting himself or fixing his mind, but it seems to me there is a very great difference which is regarded the chief object, the mere attaining or the way of attaining.

The former seems but the acquiring of that particular sum or that particular sentence, the latter the acquiring of the capacity and power to do an indefinite number of sums and to parse unlimited numbers of sentences, or what else may be required. It is true one can hardly learn to do one sum without learning something toward the doing of others. A comparatively weak man may make a great effort, on occasion, but it requires a trained athlete to sustain continuous exertion.

Such being the central thought and object, how can it best be obtained? I am often asked "How do you teach?" "What do you teach?"

It is comparatively easy to answer the latter, and the answering of it will, in a measure, give a clue to the former. First, let us glance at the conditions. Given, twenty or thirty or more persons in age from 15 to 75; some few scarcely able to read, others with a fair to good degree of education; a washerwoman sitting beside a formerly bright and successful teacher; a man whose literary attainments are limited to a spelling-book by the side of one learned in the law; men and women whose former lives were probably all they should not have been, mingled with those whose lives are like those of saints; here a face heavy with unutterable woe, there one with a smirk of self-conceit of being possessed of unutterable goodness; there one with a fixed, intent look, listening to a voice no one else hears, then another gazing with open-eyed astonishment at faces and forms no one else sees; and get some idea of what one has to control, guide and help, if he can.

We go to the piano, a song is selected; it starts off, dull and lifeless, perhaps, another is chosen. Ah! that strikes the right chord, the faces brighten and it is sung with spirit; another follows, some one asks for a favorite song and it is sung; this goes on for ten or twenty minutes, according to the spirit and interest manifested. Frequently one with a good voice is asked to sing alone and the kindly interest shown by the others in the singer's success is highly gratifying. The singing over, the news of the day receives attention by reading from newspapers, each one being encouraged to seek out and bring items to be read before the school. Comments and remarks are asked for and usually freely offered. Sometimes a whole session is passed in this way, not a book being opened. In these discourses or "talks" only two topics are excluded, viz., politics and religion.

Facts relating to either are freely allowed, but no arguments. Such talks appear to interest all, the learned and the unlearned, and all seem to have the keenest interest in all matters pertaining to natural history. The story of some intelligent act of dog or horse, etc., is almost instantly capped by something in the personal experience of some one present. We do not depend much on text, the sources of quotations, historical parallels, etc., are all

sought for to chain the attention and drive out morbid thought ; but all, as far as possible, without hurry, restraint or irritation.

Such, I may say, is the usual course of the school. Our session of nearly two hours seems usually all too short, and the time for dismissal is frequently greeted with expressions of surprise. There are, unfortunately in this, as in all other schools, days that are called "off days," "blue Mondays," when there are clouded faces, short tempers, sharp retorts, but very seldom unkind or vulgar words. Indeed, such words are rare for they are greeted by such an outburst of disapproval as not to encourage repetition. On such days the tendency of some to air their griefs and wrongs is especially strong, but we evade, check, or suppress it as best we can.

I am sometimes asked as to "how is all this received ? What mental peculiarities do you perceive ?" I must say in reply that I can see but little difference between them and other persons of equal intelligence, indeed, I am frequently surprised at the quickness with which many quite difficult subjects are grasped, and the keen and intelligent questions asked. This in regard to things new to them as well as old. The one thing most characteristic, and to me the most inexplicable, is the curious general forgetfulness.

A single illustration will give a better idea of it than any description.

At the time of Hallowe'en our talk naturally drifted to holidays and their observance. I read to them an account of the "simmel cake" in England and of its use particularly on "Mothering day" when all the young apprentices visited their mothers with little gifts and were treated in turn to this cake.

The next day when I asked what "Mothering day" was, no one could tell. There was a pause, then a volley of expressions of disgust and chagrin and remarks of "You told us all about that yesterday and we ought to be ashamed of ourselves to forget it. Why do we do it ?"

One would suppose the very name would give a perfect clue, a key to the whole thing, but out of some twenty to twenty-five persons not one could recall it. But a few words of explanation brought out a flood of remembrances of the whole subject. That the whole school should forget so easy a thing seems to me very

curious, especially as it has happened so often before, a wholesale forgetfulness, if one may use a commercial phrase to express it.

Should you ask, "Do the pupils receive any benefit from the school"? I would answer, in nearly every instance, yes, especially those who continue in attendance regularly for any length of time.

Of the benefits I will first mention improvement in deportment. It is true many are correct from the first, but where it is needed it surely comes. An instance will illustrate. A woman many years a patient joined the school last summer. After the first few days the restraint of novelty wore off and she showed her real condition. I missed her one day and found her lying on a back seat with her skirt drawn up over her head, calmly disposed for a nap. I looked at her to-day, sitting clean and prim, a model of propriety, brighter in mind, clearer in eye, better company for herself and others, but still a very insane woman. Her former silly and sometimes impertinent questions have given way to those which are always respectful and frequently intelligent, her recitations show far greater steadiness of mind. Many times was her conduct so irritating that I was just on the point of asking for detention on the wards, but now she is frequently quite a help in the school.

When one is actively and pleasantly engaged, gloomy thoughts, temptations to anger, vindictive revilings can not be indulged in, and the hours those unfortunate ones are saved from no one can estimate. Sometimes the face I've seen bright and cheerful all the sessions, I've seen begin to darken even before the school door is shut. To a few such no session would be too long.

In some cases I can see no improvement, but even such I hope are preserved from deterioration. Opposed to this, there is steady and rapid improvement of some, alas, too few, convalescents.

It is pleasant to see the weakened mind growing stronger day by day, gaining confidence and freedom of action.

The appearance of content which both Dr. Conolly and Dr. Ray mention as so marked in the French schools I think is present usually in our school, except on the "blue Mondays," I have spoken of.

One case I must relate and then close. A lady of some thirty or more years of age of a refined and cultivated appearance

attended the school something over a year ago. Her expression was one of the saddest I have ever seen. I tried to induce her to take part in the school, but without success. She could not read and could not spell, she said, although she was formerly a teacher. After repeated efforts I induced her to join in the spelling exercise. I examined it with much interest and to my great pleasure I found it correct.

The next morning she seemed almost as afraid to receive it as I was glad to give it to her. I handed it to her with a few words of praise and encouragement. Never saw I such a change in any human face. It became illumed with hope, radiant with joy. It would seem as if she had fastened all her hope on that little piece of paper ; it was now proof she had not lost everything, there was hope, good strong hope, for something in life for her yet. From that moment she seemed a changed woman and went steadily forward to recovery. Only two or three times did I see the old gloom coming back into her face, each time she asked to be excused from the class and sat apart for a while, but soon was able to conquer the rising doubts, and returned and resumed her place. In three or four weeks she seemed fully restored.

I may never have such an experience again, but I hope never to forget that radiant face. It paid well for many an hour of hard, apparently unsatisfactory work, and strengthened my faith in the value and efficacy of the moral treatment of the insane.

A STATISTICAL STUDY OF ONE THOUSAND PATIENTS.

By FREDERICK L. HILLS, M. D.,

First Assistant Physician, New Hampshire State Hospital, Concord, N. H.

The paper read before the Medico-Psychological Association last year by Dr. Charles W. Pilgrim, Supt. of the Hudson River State Hospital, New York, entitled "The Study of a Year's Statistics" and the discussion following, suggested to me an analysis of the records of the institution with which I am connected. Owing to different local conditions the examination has been made to cover a longer period of time and the lines of inquiry have diverged somewhat from those followed by Dr. Pilgrim; nevertheless there remains sufficient similarity to allow of a comparison as regards certain points presented by the two series of statistics. The records have been very carefully consulted and much time has been given to securing the accuracy of the figures.

During the seven years ending October 1, 1900, one thousand different persons were admitted to the New Hampshire State Hospital at Concord. This is the only hospital in the State. The insane are still housed at the county farms in nine counties, where they are under the supervision of the State Board of Commissioners of Lunacy, which transfers all acute and presumably curable cases to the State Hospital. This institution therefore receives practically all the acute and all the disturbed cases.

Of these admissions 533 were men and 467 were women. 37 men and 50 women were admitted two or more times during this period, making the total number of admissions 1125. Of the different persons admitted 73.6 per cent of the men and 74.2 per cent of the women were suffering from their first attack. 21 per cent of the men had previously been under treatment, and 24.5 per cent of the women were formerly inmates of this or some other institution. These figures are nearly the same as those reported

by the State Board of Insanity of Massachusetts for 1900, which gives the number of first admissions to the five public hospitals as 75.16 per cent of the total admissions. Again, it is of interest to note the proportion of the committed insane to the total population of the State. In 1895 when the population was approximately 394,009, the total number of insane in the various county farms and in the State Hospital was 712, a ratio of 1 to 553. In 1900 with a total population of 411,588 the same institutions contained 760 inmates, a ratio of 1 to 541½. This shows an increase in population at the rate of 4.46 per cent, and of insanity at the rate of 6.74 per cent during the past five years. The total number of insane in the State in 1890 was 982 (including the uncommitted). Since no very small proportion remain outside of the institutions, the actual number of insane individuals at present in the State cannot be determined until the publication of the census of 1900. Whether the small percentage of increase above noted is due to a real increase in incidence or to a more ready recognition of insanity and a more willing admission of the fact, such as would naturally follow recent public enlightenment upon the subject, is a question still open for discussion. I believe that there is a slight actual increase but a greater apparent increase due to the above causes.

RESIDENCE.

Returning to the consideration of our 1000 individuals we find that 457 were committed from the incorporated cities. There are but six cities in the State with a population above 9000, and these sent 385—38½ per cent of those committed. These cities contain 30 per cent of the population of the State. Manchester (56,987) sent 109 and Concord (19,632) 110, or more than any other city, a much higher percentage in proportion to population than Manchester or Nashua (23,898) which sent but forty-three. This is in part to be explained by the fact that from Concord cases of acute alcoholism are admitted to the Hospital, whereas from the other cities they usually are sent to the county farms. There were in all twenty-nine such cases, twenty of this number coming from Concord. Again, as regards a number of mild senile and chronic cases also committed from Concord the patients would doubtless have been kept at home had the Hospital not been so

easily accessible. Inquiry into the county residence of these patients shows the largest ratio of admissions to the population to be from Merrimac County where the Hospital is located. Next in order, not of the actual number of commitments but of the ratio of commitments to the population, come Sullivan, Strafford, Rockingham, Cheshire, Hillsboro, Carroll, Grafton, Belknap and Coos. I have looked up the number of committed insane belonging to each county on October 1, 1900, taking those in the State Hospital and in each county farm on that date and find the following to be the ratio of insane to the population of the county.

TABLE 1.

COUNTIES WITH CITIES OF OVER 9000 INHABITANTS.

Merrimac.....	1 to 382
Cheshire.....	1 to 407
Rockingham.....	1 to 429
Hillsboro.....	1 to 675
Strafford.....	1 to 715

Average for five counties..... 1 to 521.6

COUNTIES WITHOUT CITIES OF OVER 9000 INHABITANTS.

Sullivan.....	1 to 346
Grafton.....	1 to 530
Carroll.....	1 to 603
Belknap.....	1 to 930
Coos.....	1 to 1133

Average for five counties..... 1 to 708.4

Strafford County has been nearer the head of the list of commitments during the last seven years because, since the destruction of the county asylum by fire in 1893, all but three of the insane have been sent to the State Hospital. It would appear therefore that the cities send patients in a little higher proportion than the country districts, and that, on the whole, there is a higher percentage of insanity in those counties containing in larger proportion a town-dwelling, rather than a rural, population.

SEASON OF THE YEAR.

29.3 per cent of the patients were admitted in the spring months, 27.8 per cent in the summer, 20.3 per cent in the fall and 22.6 per

cent in the winter. The months of May, June and September had the largest number of admissions. There was a little difference in this respect on the two sides of the house. May, June and July gave the highest and October, March and April the lowest number of admissions on the male side. On the female side the highest number was in April, August and September and the lowest in October, November and February. The proportion of 57 per cent to 43 per cent between the summer and winter admissions was somewhat greater than that found by Dr. Pilgrim—54 per cent to 46 per cent. Here it is interesting to recall the observations of Haig—whether or not we accept his conclusions—that the increased occurrence of certain abnormal mental and physical conditions, of mental depression, suicide and murders in the spring and early summer months is coincident with an increase of uric acid in the blood and of uric-acid excretion.

CIVIL CONDITION.

TABLE 2.

CIVIL CONDITION OF THE INSANE AND GENERAL POPULATION OVER 20 YEARS OF AGE.

	Married.		Single.		Widowed.		Divorced.	
	General Popu- lation.	In- sane.	General Popu- lation.	In- sane.	General Popu- lation.	In- sane.	General Popu- lation.	In- sane.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Men	56	49	24.8	35.8	5.4	12.19	.67	2.4
Women	61.4	46	21.8	36	15.1	15.8	.86	1.9
Total	58.7	47.8	23	36.1	10.2	14	.7	2.2

In comparison with the general population of the State above twenty years of age, it is evident that insanity occurs more frequently among the single than among the married. This agrees with the statistics in general upon the subject, but just how far celibacy tends to favor the development of insanity is difficult to determine, for in many cases, as has been pointed out by Tuke, it may be that the mental condition of the individual has prevented marriage and that celibacy has not caused or favored the mental condition. Widowhood is also shown to be conducive to insanity, the proportion in these cases being far higher than among

the men. The divorced are found also in greater proportion among the insane than among the general population, and here too the men show more frequent incidence. It seems likely that in some instances the insanity is due to moral causes subsequent to the divorce, but in many others it is not improbable that the events leading up to the divorce may have been due to the unrecognized development of the mental alienation.

NATIVITY.

58.6 per cent of those admitted (61 per cent men and 55.6 per cent women) were natives of New Hampshire; 16.1 per cent were born in other New England States, Maine and Vermont chiefly; 4.6 per cent in other States; 8.1 per cent were born in Canada, 7.5 per cent in Ireland, and 5.1 per cent in other foreign countries. The native population of New Hampshire in 1890 was 80 per cent of the total. It would thus appear that the percentage of native born among the insane is about the same as that among the sane. Of the 20 per cent made up of the foreign-born population 64 per cent were from Canada and 26 per cent from Ireland; the ratio of Irish born admissions to the Irish born population was 1 to 199; and of the Canadian born admissions to the Canadian born population 1 to 571.

AGE.

The average age of the men admitted was 44.01 years; of the women, 44.13 years. 60.8 per cent were admitted during the most active period of life, between the ages of 25 and 50 years. Dr. Pilgrim's statistics gave 67 per cent for the same period of life. 15 per cent of the men and 12 per cent of the women were attacked during the period of adolescence. 21.4 per cent of the men and 19 per cent of the women were over sixty years of age. 40 per cent broke down between the ages of twenty and forty years. These figures conform to the well known facts relative to the more frequent incidence of mental collapse during that period of life when the struggle for existence is beginning to be most wearing, and when a nervous system, predisposed by heredity, improper training or unphysiological early life, succumbs to the increased strain consequent to the cares and anxieties of business and family life. The periods of the normal physiological crises are

also marked by their damaging effects upon an abnormal nervous system, and so we find the degenerative insanities frequently coming on at the age of adolescence, of the menopause and of senility. The ancient Greek physiologists recognized five climacteric years—the 7th, the 21st, the 49th, the 63d, and the 81st. Substituting the 14th for the 7th, these years may be fairly taken as approximately marking those climacteric periods whose physiological changes are factors in the development of the psychoses.

OCCUPATION.

All hospital and asylum reports contain long tables showing the occupations of the patients previous to commitment, but such tabulation is of no value unless comparison is made with those persons following similar occupations in the population at large. Below are tables giving the percentage of persons engaged in certain occupations, who were committed together with the percentage of those similarly occupied in New Hampshire according to the census of 1890.

TABLE 3.
OCCUPATION OF MEN.

	Percentage of Patients.	Percentage of Population.
In manufacturing and mechanical pursuits....	36.5%	36.9%
Farmers	20.6	33
Laborers	19	18.5
Commercial occupations.....	9	14
Professional occupations	4.8	2.76
No occupation.....	7.3	17.9

About one-third of the adult male population of the State are farmers, but only one-fifth of the admissions are from this class. It would appear from the figures that the professional men would come first in liability to insanity, the percentage of commitments being almost double that found in the general population. English statistics also give a high ratio for professional men, their number being exceeded only by the soldiers and sailors. The percentage among the laborers and those engaged in manufacturing and mechanical pursuits—mill and factory operatives and the trades—runs about even with the percentage of those employed in like manner in the population at large.

OCCUPATION IN THE CASE OF WOMEN

About 53 per cent of the women admitted were housewives and housekeepers. From the census reports it is found that about 49 per cent of the women of the State are thus engaged. 27 per cent of the women of the State have no occupation. The percentage of unemployed among the admissions was 13, a little higher ratio than for the unemployed men. 24 per cent of the female population are engaged in gainful occupations. 32 per cent were thus employed; 17.5 per cent as domestics, 10 per cent as mill operatives and in other manufacturing pursuits; 2.2 per cent as teachers; 2.3 per cent as dressmakers. Marian Harland says in the *Independent* of May 3, 1900: "In ultra-conscientious New England, the farmers' wives—a large percentage of whom are quondam school mistresses—furnish three-fourths of the population of the State Lunatic Asylums and private retreats, and thrice happy is the farmer who, at forty, has had but one wife and kept her. This is statistical, not speculative." This statement is not borne out by the statistics presented in the reports of any of the New England hospitals. At present in this institution, 15 per cent of the women are the wives of farmers. In the last seven years 23 per cent of the married women admitted were from towns of less than 5000 inhabitants. What proportion of these were farmers' wives I am unable to state with accuracy, but certainly not more than two-thirds. From the report of the Massachusetts State Board of Insanity for 1900 it is found that 976 women were committed to the five State hospitals during the year, of whom 404 were married and 203 were returned as housewives and 25 as farmers' wives. Since the opening of the State Hospital at Middletown, Connecticut, twenty-eight years ago, 40 per cent of the women committed were housewives. As the farming population in Connecticut is only about one-third that of New Hampshire, in proportion to the population, it is probable that not more than 15 per cent or 16 per cent of these were farmers' wives. The reports from the other New England States, although not stating definitely the number of farmers' wives, yet present sufficient evidence to warrant the assertion that not more than 17 per cent of the women admitted from the country districts are farmers' wives and that probably the percentage is even somewhat less. This may be somewhat speculative, but it is no romance.

ASSIGNED CAUSES.

Among the predisposing causes to insanity, aside from age, occupation, and civil condition which have been already considered, the most prominent are heredity and alcoholism. Heredity includes not only a previous family record of insanity in the direct line or in collateral branches, but also a history of epilepsy, chronic nervous disease, rheumatism, tuberculosis, cancer and, in short, any disease attended by a prolonged lowered bodily vitality. The various drug addictions and excesses of various kinds in the ancestors ought properly to be counted as factors in the heredity of insanity. In this respect, however, our records are defective inasmuch as they show with any approach to accuracy only the past occurrence in the family of insanity, epilepsy and apoplexy. Such an hereditary history was obtained in 29.8 per cent of those admitted. As this figure corresponds closely with that generally obtained in the hospitals throughout the country, and with that found by some English writers, it is evident that upon this point the people of New Hampshire are as sensitive as the rest of mankind. Could all the facts bearing upon heredity be ascertained, it is probable that 40 per cent or 45 per cent of the insanity in New Hampshire would be traceable to hereditary predisposition.

Alcoholism was a predisposing cause in 13 per cent of the men admitted. Only eight women had a history of intemperance, and three of these were cases of acute alcoholism. A syphilitic history was obtained in 3.5 per cent of the patients—21 men and 14 women.

The exciting cause given was ; poor health in 17.8 per cent, mental anxiety in 12.9 per cent and overwork in 4.7 per cent.

Of the 467 women, 2.35 per cent had a history of puerperal disturbances and 7.7 per cent of uterine disease to which the mental breakdowns were attributed. The percentage of puerperal insanity is low in New Hampshire. The records of the hospital give an average of 2.18 per cent during the last 30 years. In England the statistics show 6.7 per cent in 68,000 cases during a decade, a percentage almost identical with that given by Kraepelin. Blackford reports 8.2 per cent in the statistics of 1000 patients at the Bristol Lunatic Hospital, and of these 40.4 per

cent gave an hereditary history. Our records give 34.4 per cent of heredity. The 2nd Annual Report of the Massachusetts State Board of Insanity shows 3.5 per cent of puerperal cases with a history of heredity in 20 per cent. Peterson credits $7\frac{1}{2}$ per cent of the cases to this cause. For a period of twenty-eight years, in Connecticut, 4.7 per cent are on record; 3.7 per cent were reported in New York for the year ending Sept. 30, 1898; 3.8 per cent at Kalamazoo, Michigan, for the decade ending 1896. It will thus be seen that the patients admitted from this cause in New Hampshire are much fewer than the statistics in general report. The insanity was due to moral causes (mental anxiety, business and family troubles, death of friends, etc.) in 17.3 per cent—14 per cent men and 20.3 per cent women. Dr. Pilgrim found 20 per cent of the admissions to the Hudson River Hospital to be due to these factors, and about 33 per cent in which physical causes were responsible for the admission. The latter (diseases of various organs, injuries, the physiological crises, etc.) were exciting causes in 37 per cent of the admissions to our hospital. That these causes were also more active among the women is shown by the ratio of 45 per cent for them as against 30 per cent for the men. Senility was an etiological factor in 6.6 per cent. An hereditary history was obtained in 33 per cent of the senile cases. Probably in 50 per cent of all the patients, these assigned causes were acting on a soil fertilized by heredity, alcoholism and syphilis. In many cases no definite exciting cause could be obtained, particularly in those occurring in early adult life, and the insanity appeared to represent simply the collapse of an organism handicapped at birth, developing precociously with an adolescence marked by the onset of a degenerative insanity.

DURATION OF INSANITY BEFORE ADMISSION.

40.5 per cent of patients had been insane less than three months.

11.1 per cent of patients had been insane 3 to 6 months.

10.5 per cent of patients had been insane 6 months to 1 year.

37.9 per cent of patients had been insane over 1 year.

43 per cent of the men and 37 per cent of the women had been insane less than 3 months before admission.

On comparing these figures with those for the seven years

ending 1880, it appears that there has been an increase of $7\frac{1}{2}$ per cent in the admissions of cases of less than three months duration, and that during the last seven years the patients admitted after having been insane for over one year were 8.9 per cent less than twenty years ago. This would seem to demonstrate that the efforts put forth to emphasize the hospital idea and toward improvement in the care and treatment of the insane have in a measure had their effect upon the community and that the Insane Hospital being now looked upon with less dread, its good offices are sought somewhat earlier in the course of the disease.

FORMS OF MENTAL DISEASE.

Acute mania.—The percentage of acute manias among the admissions is the same (13 per cent) as was found by Dr. Pilgrim. 59 were men and 73 women. A history of heredity was obtained in 34.8 per cent ; of alcoholism in 8.4 per cent of the men.

The average age of men, with a hereditary history, was 38.3 years ; with no hereditary history, 38.7 years : for women, 32.6 years and 37.2 years respectively.

Recovered, 62—45.7 per cent of men and 48 per cent of women admitted.

Recovered of those with hereditary history, 42 per cent.

Recovered of those without hereditary history, 54 per cent.

Duration of insanity in those who recovered : before admission 2 months ; after admission 6.8 months ; total duration 8.8 months.

Improved by treatment 17.4 per cent. Died 9.8 per cent.

Of those discharged recovered 25.9 per cent men and 28.5 per cent women have since relapsed. Berkley says, "All forms of functional mania show a tendency to recur," and while 70 per cent to 80 per cent of the cases recover from the first attack fully 90 per cent relapse after remaining in a normal mental state a few weeks, months or years. Kraepelin states that he has seen but one case of acute mania among a thousand that did not recur and in his classification these cases are divided among a number of clinical groups.

Subacute mania.—117 cases, 69 men and 48 women. A history of heredity was obtained in 30 per cent ; of alcoholism in 12.8 per cent of men. The average age for men in cases with an

hereditary history was 45.2 years ; with no hereditary history, 42.9 years : for women, 45.4 years and 37.9 years respectively.

Recovered, 49, or 45 per cent of men and 37.5 per cent of women.

Recovered of those with hereditary history 28.5 per cent.

Recovered of those without hereditary history 47.5 per cent.

Duration of insanity in those who recovered: before admission 4.7 months ; after admission 5.4 months ; total duration 10.1 months.

Improved by treatment 26.4 per cent. Died 4.6 per cent.

Of those discharged recovered 19.3 per cent of the men and 22.2 per cent of the women have since relapsed.

Recurrent mania.—41 cases, 28 men and 13 women. A history of heredity was obtained in 39 per cent ; of alcoholism in 28 per cent of men. The average age for men, with an hereditary history, was 50.6 years ; without an hereditary history, 56.2 years ; for women 40.2 years and 43.3 years respectively.

Recovered, 21, or 57 per cent of men and 38.4 per cent of women.

Improved by treatment 14.6 per cent. Died 12 per cent.

Of those discharged recovered, 71.3 per cent of the men and all of the women have since relapsed.

Acute melancholia.—203 cases, 85 men and 118 women. A history of heredity was obtained in 35 per cent ; of alcoholism in 3.9 per cent of men.

Average age for men in cases with an hereditary history, 42.8 years ; with no hereditary history, 45.5 years ; for women, 45.5 years and 42.8 years respectively.

Recovered, 69, or 37.6 per cent of the men and 31.3 per cent of the women.

Recovered of those with hereditary history 35.2 per cent.

Recovered of those without hereditary history 33.3 per cent.

Duration of insanity in those who recovered : before admission 4.6 months ; after admission 6 months ; total duration 10.6 months.

Improved by treatment 23 per cent. Died 12.3 per cent.

Of those discharged recovered 9.3 per cent of the men and 16.2 per cent of the women have since relapsed.

Dr. Pilgrim had 33.5 per cent of melancholias among his admissions to 13 per cent of manias, a fact which would point to the admission of many patients in the period of depression preceding a maniacal attack. With us the cases of mania (acute and subacute) were in excess, 25 per cent of mania to 22 per cent of melancholia.

Primary dementia.—Twenty-six patients with this disease were of an average age of 21.6 years. 42.8 per cent of these gave a history of hereditary predisposition. Of the six discharged recovered, two have already relapsed. I have grouped under this heading cases diagnosed as stuporous melancholia, hebephrenia and katatonia—patients that would come within the katatonic and hebephrenic forms of dementia praecox, were Kraepelin's classification adopted.

Cases of the paranoid form of dementia praecox were included under the diagnosis of paranoia, 34 in all, of whom 35 per cent gave a history of heredity. Their average age was 36.7 years. The average age in the 37 cases of chronic delusional insanity was 35.8 years, and in this class 48 per cent of the women and 25 per cent of the men gave a history of heredity.

Paresis.—16 men and 8 women were admitted suffering from paresis. The average age for men was 40.5 years ; for women, 37.3 years.

A history of heredity was obtained in 16.6 per cent ; of syphilis, in 66.6 per cent ; of alcoholism, in 68 per cent of the men.

62 per cent of the men were in business or one or other of the professions. Six of the eight women were from the manufacturing towns and all gave a history of an irregular life. In the *Journal of Mental Science* for January 1901, W. W. Ireland reviews an exhaustive paper by Sprengeler, of the Asylum at Wehmen, upon the etiology of paresis. He says : "I must recognize syphilis as by far the most important cause of general paralysis whether it acts directly or indirectly ; but it is not the only cause. I should give the second place to alcoholic intoxication and the third to heredity." Backe states the predisposing cause thus : "A certain general born constitution of the brain, the peculiar nature of which is unknown to us ; further, heredity in the narrow and the wide sense ; these prepare the ground which is further

acted on by syphilis, so that through the influence of several exciting causes, especially emotional disturbance, the disease is brought out." Clevenger says: "Investigation tends to prove that in three-fourths of the cases, syphilis has antedated parietic dementia at some earlier period of life. But it is by no means proved that syphilis is the only predisposing cause. Experience also shows business and professional men more subject to paresis than others." I have no doubt that a still greater percentage than was here ascertained had a syphilitic history. The facts of New Hampshire being largely an agricultural community, of the small proportion of parietics among the admissions and these being almost entirely from the manufacturing towns and cities, tend strongly to support the belief that "civilization and syphilization" are the chief if not the only factors in the etiology of paresis. The majority of the cases of paresis, organic brain disease and paranoia came from the cities. From the country came the larger percentage of acute mania and melancholia, primary dementia and imbecility.

GENERAL RESULTS OF TREATMENT.

Looking now at the general results in these one thousand patients we find that, exclusive of the cases of acute alcoholism, 24.4 per cent were discharged recovered and 17.4 per cent improved, making 41.8 per cent materially benefited by treatment. These figures also are strikingly similar to those of Dr. Pilgrim who obtained 24.21 per cent of recoveries and a total of 42 per cent benefited by treatment.

26.4 per cent of the men and 22 per cent of the women admitted were discharged recovered. These have subsequently relapsed to the extent of 19.86 per cent for the men and 37.86 per cent for the women. Doubtless more will relapse during the next ten years and it is safe to say that not more than 15 per cent of those discharged recovered will remain well. The average age of the men recovered was 39.7 years and of the women 37.7 years.

DURATION OF INSANITY IN THOSE WHO RECOVERED.

	Before Admission.	After Admission.	Total.
Men.....	6.9 months	6.5 months	13.4 months
Women.....	6.3 months	8.1 months	14.4 months

The season of the year appeared to influence the recovery to some extent. More patients recovered in September and in May than in other months. The following table shows more men to have recovered in the summer and spring, more women in the winter and fall. The seasonal difference is much more marked in the men, the rise in the summer months being very great ; but, taking the total recoveries in each season, a steady rise in the recoveries is noted from the fall, through the winter and spring and summer.

TABLE 4.
PER CENT OF RECOVERIES IN EACH SEASON.

	Men.	Women.	Total.
Fall.....	17	26.4	21.7
Winter.....	19.1	28.1	23.1
Spring.....	26.9	25.2	26.05
Summer.....	36.8	20.3	28.5

DEATHS.

18.1 per cent had died under treatment at the end of this period.

The chief causes of death were as follows :

	Per cent of Men.	Per cent of Women.	Per cent of Both.
Organic brain disease.....	45.8	26.3	38.1
Senile dementia.....	8.2	15.2	11.7
Maniacal exhaustion.....	6.4	6.9	6.6
Heart disease.....	4.5	11.1	7.8
Phthisis.....	4.5	5.5	5.0
Paresis.....	9	5.5	7.25

The duration of hospital residence was for the men 13.3 months and for the women 18.1 months. The average age at death 55.4 years for the men and for the women 57.8 years.

More deaths occurred in the winter (32.7 per cent) and spring (24.4 per cent) than in the summer (20.8 per cent) when the mortality was lowest or in the fall (21.8 per cent). 15.7 per cent of the one thousand patients admitted were discharged not improved, some to be cared for by relatives, but many to go by transfer to the county farm asylums.

Out of a total of 56.4 per cent discharged at the end of this period, 22 per cent have been readmitted.

On October 1st, 1900, 25.9 per cent of these one thousand patients were remaining. Of these 115 were men and 144 women. 28 men and 30 women were still regarded as curable, leaving 87 men and 114 women or about 75 per cent of the remainder as incurable.

The foregoing figures represent with fair statistical accuracy some facts relative to the insanity occurring in New Hampshire during the last seven years. It has been found difficult and in many cases impossible to make comparisons with the condition in other States—comparisons which would be of interest and often, possibly, of guidance in psychiatric work—on account of the great lack of uniformity in the statistical tables given in American hospital and asylum reports, and in the methods used for the compilation of statistics, a matter in which each institution or State appears to be a law unto itself.

American Medico-Psychological Association

PROCEEDINGS OF THE FIFTY-SEVENTH ANNUAL MEETING.

TUESDAY, JUNE 11, 1901.

FIRST SESSION.

The Association convened at 10.00 o'clock A. M. in the Hotel Pfister, Milwaukee, and was called to order by the President, Dr. P. M. Wise, of New York. The Hon. Robert M. La Follette, Governor of Wisconsin, was introduced by Dr. Dewey, Chairman of the Committee of Arrangements, and addressed the Association as follows:

Mr. President, Ladies and Gentlemen.—It is a great pleasure indeed to meet you here this morning to say a few words of welcome as you assemble for your important deliberations. The work of your profession is one that brings you very near to the human heart. Since the Master uttered the command, "Heal the sick," your office has seemed to be almost a holy one. Your investigation and your learning, gentlemen, cover almost everything from the cradle to the coffin. Your work brings you nearest to the mystery of birth; it teaches you to know the face of death when afar off as he makes his insidious and silent approach. We trust you, gentlemen, with every confidence; we open to you the secret privacy of the home. How we watch and wait for your coming! How we search your face as you bend over the stricken one in your ministrations; how we hang upon your every word and upon every hope that you give us. It seems to me, gentlemen that of all the learned professions there is none upon which the human heart leans so heavily as upon yours. And to you, gentlemen, who are engaged in the business to which you are devoting your lives especially, with the zeal of the true scientist, controlled by the spirit of a broad philanthropy, I am grateful indeed to you, one and all, for the opportunity to meet you here this morning and to express to you my high personal regard and to have an opportunity to join in the cordial welcome to our State for this meeting, for which you are assembled at this time. I know you will pardon me, gentlemen, if I refer to our local system of caring for the insane, for we

feel here in Wisconsin that we can refer to it with especial pride. Beginning back many years ago, we sought to build up a system here in Wisconsin through which a board of long tenure of office and controlled and regulated by law, has control over the establishment and management of the county asylums. We have built up a system for the care of the insane, which has, as you know, I presume, become known throughout the country as the Wisconsin system. I believe that no other State has in its entirety and in its completeness this same system. I know that it has been recommended by those in high authority in other States, after a careful examination of it, and I have been lately informed that in two or three different States in the Union they are making advances along this line and seeking to distribute their insane of certain classification out among the counties of the State, under a combined local and State supervision, with the State supervision predominating. I trust that you will make a critical examination of this system here upon the occasion, as I understand, of your first meeting in our State, for with only a limited opportunity for its examination, I believe, gentlemen, that it will meet with your approval and with your critical judgment. And now let me say in conclusion that again I bid you, gentlemen, who are devoting your lives at, it seems to me, great sacrifice, to a special line of work in caring for those whose minds are affected and in providing so far as may be for their relief and for their restoration, a most cordial welcome to the State of Wisconsin and I trust that your efforts, that your convention, that your work here during this week may be attended with the highest and best results. I am glad to have this opportunity to greet you and to meet you for these few moments. (Applause.)

DR. DEWEY:—As a matter possibly of interest to those not familiar with the American Medico-Psychological Association, I would say that it has not met in Wisconsin since the reorganization, but it is an outgrowth of an older body, the Association of Medical Superintendents of American Institutions for the Insane, which was organized in 1844 and has had a continual existence since that time with annual meetings in every part of the country. In the year 1872 or 1873 that Association met in this State, in Madison. That was, however, in the twilight of the gods, we might say, and there has been a very great expansion in all matters connected with the insane since that time. The Association is now a different and much larger body and has also taken into its membership a large number of men engaged in the practice of medicine, men of eminence in different parts of the country, who are not connected with institutions for the insane but who are in private practice and whose reputation has been gained in neurological rather than psychological medicine.

I have now the gratification of being able to introduce to you the Mayor of Milwaukee, the Hon. David S. Rose, who in behalf of this city which welcomes us in such a friendly manner this morning, consents to speak a few words.

MAYOR DAVID S. ROSE, OF MILWAUKEE :

Mr. President, Ladies and Gentlemen.—Conditions that prevail in Wisconsin give His Excellency, the Governor, advantages that I do not enjoy. He is permitted to speak of the system that has been inaugurated in Wisconsin for the treatment of the insane and for the government of institutions for their care. Fortunately for Milwaukee we have no institutions of this kind, and when I give you the assurance that Milwaukee keeps pace with her sister cities in the rapid march of progress, you are justified in arriving at the conclusion that because we have no insane hospitals in Milwaukee we have no insane patients to treat. It is with exceeding pleasure that I appear in behalf of the 300,000 people who make up our citizenship, to extend to you words of greeting and cordial welcome. Milwaukee has come to be the most popular convention city of the United States, because in truth we receive and entertain more national gatherings each year than any other city in the land. To you who are strangers in our midst, perhaps it will be interesting to know something of our city in advance, something of our institutions, something of our industries and of our people. I only hope that in the interims between your sessions you will find opportunity to inspect Milwaukee, to go out into our beautiful residence district, attractive and ornamental from every point of view. Our population is a cosmopolitan population and we have embraced in that population representatives from every civilized nation of earth, all working together in perfect harmony seeking to accomplish the greatest good for the greatest number. Our public institutions will compare favorably with those of other cities of our class. Our splendid city hall, completed only a few years since at an expense of one million dollars, is one of the most commodious and most beautiful office buildings of its kind. Our magnificent museum and library building is one of the greatest educational institutions of the land. There you can go in the day or evening and you will find the youth of our city engaged in the prosecution of their studies, qualifying for business and good citizenship. Our magnificent school system forms part of the school system of the Badger State, and has placed her in the foremost rank of the sisterhood of States. Upon our schools we appropriate upwards of three-quarters of a million dollars every year. Milwaukee was confronted by the same question, the same problem that confronts the municipal government in every large city, as to whether it would be better to establish one or two large schools or a large number of small ones. In the exercise of what I esteem to be most excellent judgment, those clothed with responsibility decided upon the latter policy and in consequence we have a large

number of small departments, carrying to the poor the advantages which as a rule only the rich can enjoy in cities. And then I want to call your attention to our parks; you will find them young in years, but they are beautiful and attractive. There is one fact to which we refer with pleasure and I think with pardonable pride, and that is we have in our city no tenement house districts, breeding places of crime and disease. On the contrary our people are housed in their own dwellings. Our laboring people, upward of eighty thousand of whom are employed in our manufactories and industries, are to be found in the out-lying districts, and there in the pure and strong bracing air they rear their children to strong manhood and womanhood, and it is to that fact more than to any other we attribute the further fact that the mortality of our city is the lowest of any large city in our Union. Milwaukee is becoming one of the large manufacturing cities. Our manufactured products last year exceeded one hundred and seventy-four and one-half million dollars. We have over three thousand five hundred institutions giving employment to upwards of eighty thousand operatives. While it is true Milwaukee has obtained some celebrity because of one particular product we produce, it is likewise true that we have some of the largest manufacturing institutions of their kind in the world. The product I refer to you are at liberty to sample. If you ask me whether it is exhilarating I will say, yea, verily. If you ask me if it is intoxicating, I will say I have not knowledge or information sufficient to form a belief. Our people are a hospitable people. Our greatest pleasure is in meeting our guests and extending to them every opportunity for pleasure, and a most cordial welcome, and it is in their name that I now greet you, welcome you to our city, and express the hope that your stay with us may be filled with happy memories and pleasant recollections. I thank you. (Applause.)

DR. DEWEY:—Not only the State and city in which we are meeting but also the members of the profession of medicine in the State and city are disposed to extend to us their favor at this time, and I have now the pleasure of introducing to you the president of the State Medical Society of Wisconsin, Dr. J. F. Pritchard, of Manitowoc, who will address you. (Applause.)

J. F. PRITCHARD, M. D., PRESIDENT OF THE STATE MEDICAL SOCIETY :

Mr. President and Members of the American Medico-Psychological Association.—It is a little embarrassing, after hearing so much oratory, for one not at all a public speaker to attempt to address you, but I take great pleasure in extending to you a welcome from the medical profession of Wisconsin and from the Wisconsin State Medical Society. We hope that your deliberations may not only be pleasant but profitable.

P. M. WISE, M. D., NEW YORK, *President of the Association*, responded as follows:

On behalf of the American Medico-Psychological Association, I desire to thank your Excellency for the very kind welcome you have extended to us. I can assure you we appreciate your kind words and we will accept the opportunities you have given us. In regard to your remarks, your Excellency, upon the Wisconsin system, I can say that the system is well known. Every system is represented in this Association, but the system does not matter so much if we but reach the goal we are after. It may be a State system or a national system, but this Association has always stood for the humane and most scientific care of the insane, whatever the system. I have no doubt we will find all you have told us about your system to be true. It is a surprise to many of us to find that your country is not a prairie. After leaving Illinois we come into a rolling country and we find your beautiful lakes are broadcast like jewels over the State. I am sure it will be a pleasure to every member of the Association to accept your kind invitation to examine your institutions.

Your Honor, in reply to your generous words of welcome, I desire to say that from what I know of this Association the products of Milwaukee will be well tested. Dr. Dewey, who is responsible for the arrangements for this meeting and who is one of the ex-presidents of the Association, one of our old and honored members, met me with considerable agitation and said that the Milwaukee people are a little sensitive about beer and it might be just as well to avoid that question. When he saw my look of disappointment (Laughter) he modified his statement by saying, "Well, well, if you feel like it, it is well to fill up with."

But, gentlemen, we are all here for a serious purpose; we have a serious subject to consider. We feel that we want to be in the advance ranks of scientists and we come together in annual meetings to discuss our particular branch of medicine and the practical matters associated with our work. Fifty-seven years ago there were thirteen men who met in Philadelphia and organized this Association. To-day the Association has over three hundred members representing institutions caring for eighty or ninety thousand insane people. Without taking up any more time, I again thank you for your kind words of welcome. (Applause.)

The Committee of Arrangements, through Dr. Richard Dewey, reported as follows:

We are considerably limited in the matter of entertainment owing to the fact that the business of the Association has to take precedence. We are able to entertain one afternoon and have two evenings for relaxation. To-morrow afternoon there will be a trolley ride and a steamer ride. One is not connected with the other. Through the courtesy of Captain Davis of the

revenue cutter here we shall have the privilege of a sail to-morrow afternoon. Since that is the only afternoon we have at our disposal, we have arranged for those who do not care to "go down to the sea in ships" to take a trolley ride to Wauwatosa where is located the Milwaukee Hospital for the Insane, in charge of Dr. M. J. White, which most of you are familiar with, and the Doctor will esteem it a privilege and pleasure to welcome all who will visit this institution to-morrow afternoon. And there is also the institution under the charge of Dr. William F. Beutler, for the chronic insane, which belongs to the county care system of Wisconsin, which has been a system of so much interest to the members of our Association. It is not, however, to be regarded as the same sort of asylum for the chronic insane as are many other institutions from the fact that it has a physician, and a good one, at its head and is managed upon a higher standard of care in many ways than the institutions throughout the State of Wisconsin, which are largely under the care of laymen. It may be interesting for you to visit this institution and others near there. Then to-morrow evening, after our Annual Address, there will be a very informal reception at the Deutscher Club; it will be merely a visit and what I may term a Bohemian lunch. We will have a little music and an opportunity for dancing for those who would enjoy doing so. That will comprise the entertainment provided for with the exception of a reception here at the Hotel Pfister on Thursday at 8.30 P. M. At all these entertainments we trust we shall have the pleasure of the full attendance of the members and be able to make it agreeable and pleasant for them.

The Secretary read a telegram announcing the death of Dr. W. L. Worcester of the Danvers State Hospital, a member of the Association, on June 9.

The Secretary read a letter of regret from Dr. Morel of Belgium.

REPORT OF COUNCIL.

The Secretary read the following reports from the Council:

1. The Council recommends that the dues of active members be placed at \$5.00 and of associate members at \$2.00 for the coming year.

On motion the report was accepted and placed on file and the recommendation adopted.

2. The Council recommends that Montreal be selected as the place for the next meeting, that the meeting be held on the second Tuesday, Wednesday, Thursday, and Friday in June, 1902, and that the following Committee of Arrangements be appointed: Dr. T. J. W. Burgess, Dr. Geo. Villeneuve, Dr. A. Vallée, Dr. Jas. V. Anglin, and Dr. E. Philippe Chagnon; and that the Committee be requested to invite Dr. Jas. Perrigo, President of the Montreal Medico-Chirurgical Society, to co-operate with it.

On motion the report was accepted and placed on file and the recommendation adopted.

3. The Council recommends that all matters pertaining to transportation be referred to the Committee on Transportation of the American Medical Association with power, and that the Secretary of this Association be instructed to cooperate with said Committee in arranging for special rates.

On motion the report was accepted and placed on file and the recommendation adopted.

4. The Council reports the following candidates for membership and recommends their election :

For Honorary Membership.—Hon. Wm. Pryor Letchworth, Portage, N. Y.

For Active Membership.—Dr. Jane Rogers Baker, Embreeville, Pa.; Dr. A. P. Busey, Pueblo, Colo.; Dr. E. Philippe Chagnon, Montreal, Quebec; Dr. B. M. Caples, Waukesha, Wis.; Dr. R. Harvey Cook, Oxford, Ohio; Dr. Samuel Dodds, Anna, Ill.; Dr. L. S. Foster, Williamsburg, Va.; Dr. Marvin L. Graves, San Antonio, Tex.; Dr. C. Spencer Kinney, Easton, Pa.; Dr. Robert B. Lamb, Dannemora, N. Y.; Dr. E. H. Pomeroy, Lake Geneva, Wis.; Dr. J. S. Redwine, Lexington, Ky.; Dr. Frank M. Robertson, Elmira, N. Y.; Dr. Whitefield N. Thompson, Brattleboro, Vt.; Dr. Jno. S. Turner, Terrell, Tex.; Dr. Richard A. Urquhart, Baltimore, Md.; Dr. U. O. B. Wingate, Milwaukee, Wis.; Dr. Hubert Work, Pueblo, Colo.

For Associate Membership.—Dr. Arthur B. Coleburn, Middletown, Conn.; Dr. F. A. Ely, Clarinda, Iowa; Dr. Thomas Howell, Worcester, Mass.; Dr. George F. Inch, Kalamazoo, Mich.; Dr. Roy L. Leak, Ogdensburg, N. Y.; Dr. Butler Metzger, State Farm, Mass.; Dr. M. L. Perry, Milledgeville, Ga.; Dr. Geo. H. Torney, Jr., Utica, N. Y.

These names to be voted on at a subsequent session were placed before the Association on a printed ballot as required by the Constitution.

5. The Council recommends the adoption of the following resolution:

Resolved, That we are in favor of the establishment of a Psycho-Physical Laboratory in the Department of the Interior at Washington for the practical application of physiological psychology to sociological or pathological data, especially as found in institutions for the criminal, pauper, and defective classes and in hospitals and also as may be observed in schools and other institutions.

On motion the report of the Council was accepted and the resolution adopted.

GOVERNOR ROBERT M. LA FOLLETTE, OF WISCONSIN:—We are 'about three hours' ride from the capital city of the State. Near the capital city, upon the banks of one of the lakes adjacent to it, is located a hospital for the insane of the State. A short run on a branch line will also carry you to one of the asylums to which reference has been made. But I do not believe there is in the State of Wisconsin a single asylum under the same management as the country poor house. I think that was the case many years ago in the beginning of this county asylum system, but I believe every county asylum is now provided with a special superintendent. It is true he is a layman. I hope you will find it possible to make a run out to the capital city, see our beautiful city there, and visit the asylum that is nearest to it under this system and visit our State hospital as well. I shall be glad indeed to have the opportunity of welcoming the Association there at that time. I assure you, gentlemen, that you will see us in our every-day clothes and that no preparation will be made for your coming. I thank you very much.

The following invitation was read by the Secretary:

International Association of Railway Surgeons.

Milwaukee, Wis., June 10, 1901.

To the Officers and Members of the American Medico-Psychological Association:

Gentlemen: The International Association of Railway Surgeons extends a cordial invitation to the members of its sister society to visit its sessions and participate in the proceedings which are held in the Arcade of the Plankinton Hotel.

(Signed) LOUIS J. MITCHELL, Secretary.

On motion the Secretary was instructed to extend an invitation to the International Association of Railway Surgeons to

attend the meetings of this Association and participate in its discussions.

It was moved that the local profession in the vicinity, the members of State boards, and all others interested in the care of the insane, be invited to attend the meetings of the Association and participate in its discussions. Which motion unanimously prevailed.

The following report was read by the Treasurer:

C. B. BURR, Treasurer, in account with the American Medico-Psychological Association:

DEBITS.

Balance, May 1, 1900	\$1092.62
Dues from Active Members	1190.00
Dues from Associate Members	170.20
Interest	41.97
Sale of Blackburn's Autopsies	1.76
Sale of Gummed Lists	7.74
	<hr/>
	\$2504.29

CREDITS.

Printing Transactions, Lists of Members, Reprints	\$631.85
Mailing Cases	18.00
Express on Reprints	11.16
Miscellaneous Printing, Stationery & Rubber Stamps	67.35
Stenographer & Clerical Hire	196.34
Committee Room, Richmond Meeting	38.00
Baggage, Porters, Janitors & Bell Boys	10.00
Secretary's Expenses to Committee Meeting, Milwaukee	20.50
Appropriation for AMERICAN JOURNAL OF INSANITY	200.00
Postage & Express	121.30
Telegraphing & Telephoning	6.27
Appropriation toward Expenses of American National Committee, XIII. International Medical Congress	25.00
Balance in First National Bank, Flint, Mich., on savings account	\$400.00
Balance in First National Bank, Flint, Mich., on commercial account	76.77
Balance in Genesee County Savings Bank	711.75
	<hr/>
	\$1188.52

Total, (May 1, 1901)\$2504.29

Very respectfully,

C. B. BURR,
Treasurer.

Dr. Woodson moved that the report be received and referred to the Auditors. Which motion prevailed.

The Association took a recess of ten minutes for the purpose of registration.

The following members were present during the whole or a part of the sessions:

Allison, Henry E., M. D., Medical Superintendent, Matteawan State Hospital, Fishkill Landing, N. Y.

Baldwin, Henry C., M. D., Chairman Board of Trustees, Boston Insane Hospital, 126 Commonwealth Ave., Boston, Mass.

Becker, W. F., M. D., Consulting Neurologist, Milwaukee County Hospital, Milwaukee, Wis.

Beutler, Wm. F., M. D., Medical Superintendent, Asylum for Chronic Insane, Wauwatosa, Wis.

Brower, D. R., M. D. (formerly Medical Superintendent Eastern State Hospital, Williamsburg, Va.), 34 and 36 Washington St., Chicago, Ill.

Brush, Edward N., M. D., Physician-in-Chief and Superintendent, Sheppard and Enoch Pratt Hospital, Towson, Md.

Buchanan, J. M., M. D., Medical Superintendent, East Mississippi Insane Asylum, Meridian, Miss.

Burnet, Anne, M. D., Assistant Physician, Hospital for the Insane, Clarinda, Iowa.

Burr, C. B., M. D., Medical Director, Oak Grove Hospital, Flint, Mich. (Secretary.)

Bussey, A. P., M. D., Superintendent, Colorado State Insane Asylum, Pueblo, Colo.

Campbell, Michael, M. D., Medical Superintendent, Eastern Hospital for the Insane, Knoxville, Tenn.

Carpenter, Eugene G., M. D., Medical Superintendent, Columbus State Hospital, Columbus, Ohio.

Christian, Edmund A., M. D., Medical Superintendent, Eastern Michigan Asylum, Pontiac, Mich.

Clarke, Chas. K., M. D., Medical Superintendent, Rockwood Hospital for the Insane, Kingston, Ont.

Clark, Daniel, M. D., Medical Superintendent, Asylum for the Insane, Toronto, Ont.

Clark, Joseph Clement, M. D., Superintendent, Springfield State Hospital, Sykesville, Md.

Cook, Geo. F., M. D., Physician-in-Charge, Oxford Retreat, Oxford, Ohio.

Dent, E. C., M. D., Superintendent, Manhattan State Hospital West, Ward's Island, N. Y.

Dewey, Richard, M. D., Physician-in-Charge, Milwaukee Sanitarium, Wauwatosa, Wis., and 34 Washington St., Chicago, Ill. (President, 1896.)

Dewing, Oliver M., M. D., Medical Superintendent, Long Island State Hospital, King's Park, N. Y.

Drew, Chas. A., M. D., Medical Director, State Asylum for Insane Criminals, State Farm, Mass.

Eastman, B. D., M. D. (Late Superintendent, State Asylum), 829 Kansas Ave., Topeka, Kans.

Edenharter, Geo. F., M. D., Medical Superintendent, Central Indiana Hospital for the Insane, Indianapolis, Ind.

Edwards, Wm. M., M. D., Medical Superintendent, Michigan Asylum for the Insane, Kalamazoo, Mich.

Elliott, Robert M., M. D., Medical Superintendent, Long Island State Hospital, Brooklyn, N. Y.

Emerson, Justin E., M. D., Attending Physician, St. Joseph's Retreat, 128 Henry St., Detroit, Mich.

Eyman, H. C., M. D., Medical Superintendent, Massillon State Hospital, Massillon, Ohio.

French, Edward, M. D., Superintendent, Medfield Hospital for the Insane, Harding, Mass.

Gordon, W. A., M. D., Medical Superintendent, Northern Hospital for the Insane, Winnebago, Wis.

Graves, Marvin L., M. D., Superintendent, Southwestern Hospital for the Insane, San Antonio, Tex.

Gundry, Richard F., M. D., Member Board of Managers, Springfield State Hospital; Medical Director, Richard Gundry Home, Catonsville, Md.

Hancker, W. H., M. D., Medical Superintendent, Delaware State Hospital, Farnhurst, Del.

Harmon, F. W., M. D., Medical Superintendent, Longview Hospital, Carthage, Ohio.

Harrington, Arthur H., M. D., Medical Superintendent, Danvers Insane Hospital, Hathorne, Mass.

Haviland, Clarence Floyd, M. D., Assistant Physician, Manhattan State Hospital East, Ward's Island, N. Y.

Hill, Chas. G., M. D., Physician-in-Chief, Mt. Hope Retreat, Baltimore, Md.

Hill, Gershom H., M. D., Medical Superintendent, Hospital for the Insane, Independence, Iowa.

Hitchcock, Chas. W., M. D., Attending Neurologist, Harper Hospital; 132 Henry St., Detroit, Mich.

Houston, John A., M. D., Medical Superintendent, Northampton Insane Hospital, Northampton, Mass.

Howard, Eugene H., M. D., Medical Superintendent, Rochester State Hospital, Rochester, N. Y.

Howard, Herbert B., M. D., Massachusetts General Hospital, Boston, Mass.

Inch, Geo. F., M. D., Assistant Physician, Michigan Asylum for the Insane, Kalamazoo, Mich.

Kilbourne, Arthur F., M. D., Medical Superintendent, Rochester State Hospital, Rochester, Minn.

Kulp, John H., M. D., Superintendent Insane Department, Mercy Hospital, Davenport, Iowa.

Mabon, Wm., M. D., Superintendent, St. Lawrence State Hospital, Ogdensburg, N. Y.

Macdonald, Alexander E., M. D., Superintendent, Manhattan State Hospital East, Ward's Island, N. Y.

MacGugan, Arthur, M. D., Assistant Physician, Michigan Asylum for the Insane, Kalamazoo, Mich.

Macy, Wm. Austin, M. D., Medical Superintendent, Willard State Hospital, Willard, N. Y.

Meredith, Hugh B., M. D., Superintendent and Physician, State Hospital for the Insane, Danville, Pa.

Mitchell, Thomas J., M. D., Superintendent, State Insane Hospital, Asylum, Miss.

Murphy, John B., M. D., Medical Superintendent, Asylum for the Insane, Brockville, Ont.

Noyes, William, M. D., Superintendent Men's Department, Boston Insane Hospital, Mattapan, Mass.

Palmer, Harold L., M. D., Superintendent, Utica State Hospital, Utica, N. Y.

Park, John G., M. D., Member Board of Trustees, Medfield Insane Asylum (formerly Superintendent, Worcester Insane Hospital), Groton, Mass.

Pilgrim, Charles W., M. D., Medical Superintendent, Hudson River State Hospital, Poughkeepsie, N. Y.

Pomeroy, Emmet H., M. D., Medical Superintendent, The Sanitarium of Lake Geneva, Lake Geneva, Wis.

Preston, R. J., M. D., Medical Superintendent, Southwestern State Hospital, Marion, Va. (President Elect.)

Ratliff, J. M., M. D., Superintendent, Dayton State Hospital, Dayton, Ohio.

Redwine, J. S., M. D., Medical Superintendent, Eastern Kentucky Asylum for the Insane, Lexington, Ky.

Reynolds, Thomas W., M. D., Assistant Physician, Asylum for the Insane, Hamilton, Ont.

Richardson, A. B., M. D., Medical Superintendent, Government Hospital for the Insane, Washington, D. C.

Robinson, J. F., M. D., Medical Superintendent, State Hospital No. 3, Nevada, Mo.

Rogers, Joseph G., M. D., Medical Superintendent, Northern Indiana Hospital for the Insane, Longcliff, Logansport, Ind. (President, 1900.)

Runge, Edward C., M. D., Superintendent and Physician-in-Charge, St. Louis Insane Asylum, St. Louis, Mo.

Scribner, Ernest V., M. D., Medical Superintendent, Worcester Insane Asylum, Worcester, Mass.

Smith, Geo. A., M. D., Medical Superintendent, Manhattan State Hospital at Central Islip, Central Islip, Long Island, N. Y.

Smith, S. E., M. D., Medical Superintendent, Eastern Indiana Hospital for the Insane, Richmond, Ind.

Stone, Barton W., M. D., Superintendent, Beechhurst Sanitarium, Louisville, Ky.

Tobey, Henry A., M. D., Medical Superintendent, Toledo State Hospital, Toledo, Ohio.

Tomlinson, H. A., M. D., Medical Superintendent, St. Peter State Hospital, St. Peter, Minn.

Turner, Jno. S., M. D., Superintendent, North Texas Hospital for the Insane, Terrell, Texas.

Tuttle, George T., M. D., Assistant Physician, McLean Hospital, Waverly, Mass. (Associate Member).

Vallée, Arthur, M. D., Medical Superintendent, Quebec Asylum for the Insane, Quebec.

Wade, J. Percy, M. D., Medical Superintendent, Maryland Hospital for the Insane, Catonsville, Md.

White, M. J., M. D., Medical Superintendent, Milwaukee Hospital for the Insane, Wauwatosa, Wis.

Wingate, Uranus O. B., M. D., Member Honorary Medical and Surgical Staff, Milwaukee Hospital for the Chronic Insane, Milwaukee, Wis.

Winslow, F. C., M. D., Physician-Superintendent, Illinois Central Hospital for the Insane, Jacksonville, Ill.

Wise, Peter M., M. D., 1135 Broadway, New York, N. Y. (President, 1901.)

Woodson, C. R., M. D., Medical Superintendent, State Hospital No. 2, St. Joseph, Mo.

Worsham, B. M., M. D., Superintendent, State Hospital for the Insane, Austin, Tex.

Wright, Arthur Brownell, M. D., Assistant Physician, Manhattan State Hospital East, Ward's Island, N. Y. (Associate Member.)

Other visitors and guests of the Association were as follows:

Ernest L. Bullard, M. D., Superintendent, Wisconsin State Hospital for the Insane, Mendota, Wis.

J. Robert Buchanan, M. D., Nevada, Mo.

R. G. Crabell, Jr., M. D., Assistant Physician, Central Hospital for the Insane, Petersburg, Va.

Oscar Chrysler, M. D., Assistant Physician, National Home for Disabled Volunteer Soldiers, Wisconsin.

Archibald Church, M. D., Professor Nervous and Mental Diseases, Northwestern University Medical School; Neurologist, St. Luke's Hospital; 804 Pullman Bldg., Chicago, Ill.

A. Ivins Comfort, M. D., Assistant Surgeon National Home, National Home Hospital, National Home, Wis.

J. G. Furnish, M. D., Superintendent, Central Kentucky Asylum for the Insane, Lakeland, Ky.

Herman Gasser, M. D., Platteville, Wis.

Daniel H. Fuller, M. D., Resident Physician, Adams Nervine Asylum, Jamaica Plains, Mass.

J. C. Hall, M. D., Surgeon, I. C. R. R.; Health Officer, Sharkey County, Miss., Anguilla, Miss.

Thos. H. Hay, M. D., 209 19th St., Milwaukee, Wis.

B. B. Hopkins, Esq., President Board of Trustees, Milwaukee Hospital for the Insane, 201 Prospect Ave., Milwaukee, Wis.

Samuel W. Hopkinson, Esq., Bradfield, Mass., Chairman of Board of Trustees, Danvers Insane Hospital.

L. D. James, Esq., Trustee, Northampton Insane Hospital, Northampton, Mass.

Walter Kempster, M. D., 426 Jackson St., Milwaukee, Wis.

E. L. Kenyon, M. D., Milwaukee Hospital for the Insane, Milwaukee, Wis.

Warren P. Lombard, M. D., Professor of Physiology, University of Michigan, Ann Arbor, Mich.

Lydia H. Labaume, M. D., Assistant Physician, Bellevue Sanitarium, Batavia, Ill.

His Excellency, Robert M. La Follette, Governor of Wisconsin, Madison, Wis.

O. R. Long, M. D., Medical Superintendent, State Asylum, Ionia, Mich.

Wm. J. Mayo, M. D., Surgeon to St. Mary's Hospital, Rochester, Minn.

T. E. McGarr, Esq., Secretary State Lunacy Commission, Albany, N. Y.

Geo. E. Malsbary, M. D., Stenographic Reporter, American Medico-Psychological Association, 1631 Sycamore St., Cincinnati, Ohio.

Phillip H. Oyler, M. D., Mt. Pulaski, Ill.

J. F. Pritchard, M. D., President, State Medical Society, Manitowoc, Wis.

The Honorable David S. Rose, Mayor of Milwaukee.

Bryant Smith, M. D., Surgeon, St. Mary's Hospital, and Children's Free Hospital, 136 Wisconsin St., Milwaukee, Wis.

J. R. Van Buren, Esq., Trustee, Georgia State Sanitarium, Milledgeville, Ga.

Mary M. Wolfe, M. D., Resident Physician, Norristown State Hospital, Norristown, Penn.

Reconvened after recess.

The President appointed the following Nominating Committee: Dr. Edward N. Brush, Towson, Md.; Dr. Gershom H. Hill, Independence, Ia.; and Dr. Thos. W. Reynolds, Hamilton, Ont.

The Annual Address of the President was then read.

DR. A. B. RICHARDSON, WASHINGTON:—I know that I voice

the sentiment of all in moving a vote of thanks to our President for his very creditable and worthy address. It is practical and at the same time sufficiently idealistic to stimulate us all. I am gratified at the opportunity of moving a vote of thanks.

The motion prevailed unanimously.

THE PRESIDENT:—I am obliged to the members of the Association for their hearty thanks.

Adjourned.

SECOND SESSION.

The Association was called to order by the President at 3.00 P. M.

The following letter was read:

Mons, June 30, 1901.

Dear Doctor: I received this midday your kind invitation to cooperate in your next annual meeting and will give you a proof of my good will.

I am preparing a paper for the next Congress of Anthropology (Criminal) to be held in Amsterdam, in September next. It is nearly finished and herewith I send you the mother-ideas of this paper so that your meeting will have an early part of it. In order that the paper may reach you by June 11th, I will not take time to translate it, but I dare hope you will find some good-hearted colleague who will do so.

Hoping you will apologize in my name for not being able to attend the Association and wishing you every success during your Presidency, I remain, dear President,

Yours very sincerely,

JULES MOREL.

The paper by Dr. Morel entitled, "Prophylaxis of Degeneracy among Recidivists," was read by title.

A vote of thanks was unanimously tendered Dr. Morel for the paper.

On motion the Secretary was instructed to send a telegram of sympathy to Dr. T. O. Powell who has been prevented from attending the meeting of the Association by the death of his daughter.

The following papers were read: "Is Legal Recognition of Graduated Responsibility Practicable?", A. B. Richardson, M. D., Washington, D. C.; discussed by Dr. Chas. A. Drew, Dr. Michael Campbell, Dr. Richard Dewey, Dr. Henry E. Allison, and by Dr. Richardson in closing. "A Recent Kansas

Statute," B. D. Eastman, M. D., Topeka. "Heredity, Environment: Conditions Influencing Development and Decay," R. J. Preston, M. D., Marion, Va.; read by title. "Psychic Treatment," Edward C. Runge, M. D., St. Louis; discussed by Dr. C. B. Burr, Dr. Edward N. Brush, Dr. Richard Dewey, Dr. Chas. G. Hill, Dr. Peter M. Wise, and by Dr. Runge in closing.

"Notes on the Hebrew Insane," Frank G. Hyde, M. D., Ward's Island, N. Y.; read by Dr. Wright; discussed by Dr. J. C. Clark, Dr. C. R. Woodson, Dr. Henry A. Tobey, Dr. E. N. Brush, Dr. P. M. Wise, Dr. A. E. Macdonald. Dr. Hyde was by motion requested to continue his studies in the line of the paper presented and report at a future meeting of the Association. "Traumatic Encephalitis: Report of a Case," Henry P. Frost, M. D., Buffalo; read by Dr. Mabon.

The Committee of Arrangements announced that the next session would be held in the rooms of the Milwaukee County Medical Society.

Adjourned.

WEDNESDAY, JUNE 12, 1901.

FIRST SESSION.

The Secretary read the names reported yesterday by the Council and recommended for membership.

Moved by Dr. Woodson that the Secretary be directed to cast the ballot of the Association for the candidates recommended.

Which motion unanimously prevailed and the candidates were declared duly elected.

The following report of the Nominating Committee was presented:

The Nominating Committee respectfully recommends the following gentlemen as officers of the Association for the ensuing year:

President.—Dr. R. J. Preston, of Virginia.

Vice-President.—Dr. G. Alder Blumer, of Rhode Island.

Secretary and Treasurer.—Dr. C. B. Burr, of Michigan.

Auditors.—Dr. Wm. M. Edwards, of Michigan; Dr. N. H. Beemer, of Ontario.

Councilors for Three Years.—Dr. Jno. B. Chapin, of Pennsylvania; Dr.

Henry M. Hurd, of Maryland; Dr. P. L. Murphy, of North Carolina;
Dr. Edward C. Runge, of Missouri.

Respectfully submitted,

EDWARD N. BRUSH,
GERSHOM H. HILL,
THOS. WM. REYNOLDS.

Dr. A. B. Richardson moved that the report be accepted and that the Secretary cast the ballot of the Association for the election of the officers named.

Dr. F. C. Winslow moved to lay the report on the table, which motion was lost.

The original motion then prevailed and the officers were declared duly elected.

The following report from the AMERICAN JOURNAL OF INSANITY was read by Dr. E. N. Brush:

Baltimore, June 6, 1901.

To The American Medico-Psychological Association:

I present herewith a statement of the account of the AMERICAN JOURNAL OF INSANITY during the past year. The amount of money available for the payment of the bills of the JOURNAL has been \$3016.48. This includes \$200 paid for the first time this year from the treasury of the Association to Dr. F. R. Smith, of Baltimore, for proof-reading and revising manuscripts. The expenditures for all purposes have been \$2443.76. This leaves a balance of \$572.72 to the credit of the JOURNAL for the coming year. Vouchers covering all expenditures are submitted; and I would request that they be placed in the hands of the auditors.

The JOURNAL has been issued regularly each quarter with a fair degree of punctuality, although it must be confessed that considerable remains to be attained in this particular. The JOURNAL is slowly growing in subscription and in influence. In behalf of the Board of Editors I would bespeak greater interest in the JOURNAL and more cooperation on the part of the members of the American Medico-Psychological Association. The JOURNAL needs strengthening on the clinical side. Reports of clinical cases, studies of forms of disease, therapeutic suggestions, and details of clinical methods are needed to make the JOURNAL useful to its readers. It is evident that the members of the Association are entering upon a new era in the study and treatment of insanity, and it logically follows that the JOURNAL which they own and control should accurately reflect the advances which are made. No medical journal in America presents a more attractive appearance and none covering the specialty of alienism has as wide a circulation. I would express the hope that the 58th volume may exceed in interest and importance any previously published. The present editors of the JOURNAL are busy men and can-

not, in justice to other duties, accomplish more than they are doing now. It rests with the members of the American Medico-Psychological Association to make the JOURNAL what it ought to be.

Very respectfully submitted, in behalf of the Editorial Committee,

HENRY M. HURD, Managing Editor.

The report was referred to the Auditors.

The following papers were read: "Examination of the Stomach Contents of the Insane," Wm. M. Edwards, M. D., Kalamazoo, Mich. Dr. Edwards stated that the paper should be under the name of Dr. Florence E. Allen, assistant physician and pathologist, whose work it represents. The paper was discussed by Dr. C. G. Hill, Dr. Runge, Dr. Tomlinson, Dr. Robinson, and Dr. Edwards. "The Need of Better Provision for the Care of Cases of Delirium Tremens and of Doubtful Mental Disease," Henry C. Baldwin, M. D., Boston; discussed by Drs. Carpenter, Brower, Richardson. "General Hospital Treatment of Certain Cases of Acute Insanity," D. R. Brower, M. D., Chicago; discussed by Drs. O. R. Long, W. M. Edwards, Richard Dewey, H. A. Tomlinson, E. N. Brush, H. B. Howard, Archibald Church, of Chicago, C. W. Hitchcock, and by Dr. Brower in closing. "Limitations of Surgical Work in Hospitals for the Insane," Wm. J. Mayo, M. D., Rochester, Minn.; discussed by Drs. W. M. Edwards, Richard Dewey, C. R. Woodson, E. N. Brush, H. B. Howard, and by Dr. Mayo in closing.

The following papers were read by title: "Electricity in the Treatment of Insanity," W. M. Knowlton, M. D., Brookline, Mass. "Static Electricity in Alcoholic Insanity," Thos. E. Bamford, M. D., Poughkeepsie, N. Y.

Adjourned.

SECOND SESSION.

The Association convened at the Hotel Pfister at 8.30 P. M.

THE PRESIDENT:—One of the best changes which was made when this Association was changed from the Association of Superintendents to the American Medico-Psychological Association, was the introduction of the feature which we have at this meeting to-night, that of an annual address by some physician outside of the active membership of the Association. Thus we get a new point of view and we are often brought in contact

with a subject with which we are not so familiar as we are with institutions. It is my extreme pleasure to introduce to you a gentleman to-night, who has worked at Leipsic on the subject on which he will address you and who is now at Ann Arbor. Physiological Psychology is a subject we are interested in both theoretically and practically. It is with the utmost pleasure that I introduce to you Professor Warren P. Lombard, of Ann Arbor, Mich. (Applause.)

The Annual Address was then delivered by Prof. Warren P. Lombard, of Ann Arbor, Mich.

DR. H. A. TOMLINSON:—On behalf of the Association I move a vote of thanks to Professor Lombard for his very interesting and instructive address to us this evening.

DR. RICHARD DEWEY:—Dr. Lombard has given us a very fascinating treatment of a very fascinating subject, and I hope that at a future time we may have the opportunity to read his address, when we can more thoroughly appreciate it after more careful study than is possible in a crowded assemblage.

Dr. Tomlinson's motion prevailed unanimously.

The Association then adjourned to the Deutscher Club.

THURSDAY, JUNE 13, 1901.

FIRST SESSION.

DR. E. N. BRUSH:—Last year the Association made an appropriation of two hundred dollars to the AMERICAN JOURNAL OF INSANITY. While the JOURNAL has a comfortable balance this year over last year, I would move that the appropriation be again made this year.

The motion unanimously prevailed.

DR. E. N. BRUSH:—Two years ago I was appointed on a Committee to confer with the Congress of American Physicians and Surgeons with a view to this Association becoming a part of the association of bodies forming that triennial congress. I have seen the Secretary who informs me that it is necessary to carry it before the Congress, so that I am only able at the present time to report progress in the matter. The Congress does not have another meeting until 1903 and the application must be made to the Executive Committee of the Congress, with a copy of the Trans-

actions and the Journal and satisfactory evidence that this Association is a society worthy to be associated with them in the formation of this Congress.

On motion the report was accepted and the Committee was continued.

DR. E. N. BRUSH:—I rise to make a correction. In the Transactions it is stated that I am Chairman of the Committee to prepare a history of the Association. This is a mistake and it is an injustice to Dr. Babcock. I move that the matter be corrected in the Transactions this year and that Dr. Babcock be informed that he is Chairman of that Committee.

The motion prevailed unanimously.

REPORT OF THE AUDITORS.

DR. WM. M. EDWARDS:—This report has been delayed partly on account of the non-arrival of Dr. Lyman, the second auditor. I am informed that the Doctor will not be here at all, so make the report, which is as follows:

Milwaukee, Wis., June 13, 1901.

To the American Medico-Psychological Association:

Your Auditing Committee would respectfully report that it has examined in detail the accounts of the Treasurer, including the receipts and vouchers for disbursements, and finds them correct and that the balance to the credit of the Treasurer on May 1, 1901, was \$1188.52.

The Committee has also examined the statement of account of the AMERICAN JOURNAL OF INSANITY for the year ending April 30, 1901, and checked in detail the vouchers for disbursements. The account shows a balance of cash carried forward to the new account \$572.72.

The accounts as presented, are found to be correct.

Very respectfully submitted,

WM. M. EDWARDS, for the Auditors.

On motion the report was accepted and placed on file.

DR. A. E. MACDONALD:—In accordance with the appointment of the Association, I attended the XIIIth International Medical Congress at Paris and also the British Medical Association at Ipswich last year, and I was most agreeably received as a representative of this Association. The next International Medical Congress will be held at Madrid and I would recommend that the Association appoint a delegate to that meeting.

Dr. Richardson moved that the report by Dr. Macdonald be

received and spread on the minutes of the Association, and that the Council be requested to appoint a delegate to the next International Medical Congress at Madrid. Carried unanimously.

The following papers were read: "A Review of Pathological Work," G. H. Hill, M. D., and A. M. Barrett, M. D., Independence, Ia. "Abnormal Brain Development," Henry C. Eyman, M. D., Massillon, Ohio. "The Pathology of Insanity," Louis C. Pettit, M. D., Ward's Island, N. Y.; read by Dr. C. F. Haviland. The papers by Drs. Eyman and Pettit were discussed by Drs. H. A. Tomlinson, Chas. A. Drew, and by Dr. Haviland in closing.

The following papers were read by title: "Tuberculosis among the Insane," Wm. Charles White, M. D., Indianapolis, Ind. "Normal and Abnormal, Rational and Irrational Delusion," C. H. Hughes, M. D., St. Louis. "Hydrotherapy in its Relation to Insanity," W. A. Gordon, M. D., Winnebago, Wis.

The following paper was read: "Cardiac Conditions in the Insane," Arthur MacGugan, M. D., Kalamazoo, Mich.; discussed by Drs. Chas. G. Hill, C. B. Burr, H. A. Tomlinson, and by Dr. MacGugan in closing.

Adjourned.

SECOND SESSION.

The following resolution was offered by Dr. H. A. Tomlinson:

Resolved, That the American Medico-Psychological Association expresses thanks to the Committee of Arrangements and their ladies for the bountiful and delightful entertainment furnished its members. Also for the admirable arrangements for the meeting.

Resolved, That the thanks of the Association be also extended to the Governor of Wisconsin and the Mayor of Milwaukee; to the President of the State Medical Society of Wisconsin and the medical profession of Milwaukee; to the officers of the Revenue Cutter Morrill, and the Deutscher Club; to the Manager of the Hotel Pfister for the excellent provision made for the comfort of members and their ladies; and to the Milwaukee County Medical Society for the use of its assembly room.

The resolution was unanimously adopted.

The following papers were read: "Genesis of Hallucination, Illusion and Delusion," H. A. Tomlinson, M. D., St. Peter, Minn.; discussed by Dr. Richard Dewey, Dr. P. M. Wise, and by Dr. Tomlinson in closing. "Operative Work among the Insane," Anne Burnet, M. D., Clarinda, Ia.; discussed by Drs.

P. M. Wise, Chas. A. Drew, Geo. F. Inch, E. C. Runge, and Richard Dewey, and by Dr. Burnet in closing. "Gastrotomy for the Removal of Foreign Bodies," Geo. F. Inch, M. D., Kalamazoo, Mich.; discussed by Drs. H. A. Tomlinson and W. M. Edwards.

The following papers were read by title: "Episodes in Gynæcological Practice among the Insane," W. P. Manton, M. D., Detroit, Mich. "Some Minor Studies Pertaining to the Etiology and Forms of Insanity in North Dakota," Dwight S. Moore, M. D., Jamestown, N. D. "Treatment of the Insane; Therapeutic Suggestions," Chas. G. Hill, M. D., Baltimore, Md.

A memorial notice of Dr. Frank C. Hoyt was read by Dr. G. H. Hill, of Iowa.

A memorial notice of Dr. W. L. Worcester, by Dr. A. H. Harrington, was read by title.

DR. PETER M. WISE:—And now, members of the Association, the time has come when we must separate to go to our respective homes for another year. I hope that all of us may be able to meet in Montreal. It gives me great pleasure to introduce to you your President, Dr. Preston. (Applause.)

DR. PRESTON:—*Members of the Association*, I thank you most heartily for the honor you have conferred upon me, especially since there are so many more worthy of the honor. I feel, too, that the honor comes not so much to myself as to my section and to my State, a State that, as was said by a distinguished speaker yesterday, claims the honor to have had the first asylum for the insane on this continent. It is said also that she claims the honor of having built the first asylum for the colored insane on this continent. On behalf of that State I bear you cordial greeting. This old mother of States was among the first to inaugurate this benevolence and charity and looks with pride now on the great advances put forth by other States here in the West and in other parts of the Union, and by you, gentlemen, representing these States at these annual meetings and in your hospitals, and she bids you God speed in your good work. I again thank you most heartily and with your forbearance and help I promise a faithful performance of the duties as far as I am able. I wish you all a pleasant homeward journey and hope to meet you all next year. (Applause.)

Adjourned.

C. B. BURR, Secretary.

A LETTER FROM ESQUIROL AND A PRESCRIPTION FROM RUSH.

Among the illustrations of this issue of the JOURNAL are *fac simile* reproductions of a letter written by Esquirol and a prescription by Benjamin Rush. The originals of these manuscripts are in the possession of Dr. John B. Chapin, having been sent to him by the late Dr. D. Tilden Brown in 1888. Dr. Brown wrote the following explanation which leaves their genuineness beyond the chance of doubt, even if it were not sufficiently established by the handwriting and the character of the directions given to patients.

Dr. Brown wrote: "I have long had in my possession two MSS. possessing medico-psychological interest, which have lain in obscurity many years, but which ought to 'arise and shine,' and I do not know how they could better perform such function than under your guardianship. One is a letter of Esquirol, relative to the case of a New York lady, concerning whose health he was consulted—the lady being then in Paris. I was subsequently well acquainted with the lady and her family and the letter was given me by them. The other paper is also a professional 'conseil' and prescription by Dr. Benjamin Rush, of Philadelphia, given in a case of mental disturbance. This was given me by the patient's (a lady) grandson, a friend of mine. I suppose the fame of Dr. Rush was almost as great and as widespread, in America, as that of Esquirol in France. Hence, as one of their confrères of a younger generation, you may find some interest in the respective 'sign-manual' of this 'par nobile fratrum.' "

Esquirol's letter is dated 1838, the year in which his work "Des Maladies Mentales" was issued. It may thus be taken as an expression of opinion formed at the height of his fame, and when he was among the leaders of this department of medicine. Those of our readers who are interested, and who have

not at hand a copy of Esquirol's treatise, may find a lengthy extract in that compilation of the literature of insanity made by the late Dr. Galt, and collected in one volume entitled "The Treatment of Insanity." Dr. Galt, who was one of the "Original Thirteen," published this book in 1846, and indicates the value attached to the writings of Esquirol by his elaborate and careful synopsis of "Des Maladies Mentales."

Dr. Rush's fame is perhaps more faithfully preserved by American alienists, and his signature is more familiar. His volume of "Medical Inquiries and Observations upon the Diseases of the Mind" was published in 1812, only a few months before his death, and the prescription of which a copy is presented, like the letter of Esquirol, was written at the zenith of his fame.

/

La santé de M^{de} F... que
me fait l'honneur de me
consulter n'offre rien qui puisse
légitimement donner la moindre
inquiétude ni pour la vie ni
pour la raison. M^{de} est en-
prise à une affection du
système nerveux. Sa susceptibilité
est exaltée, tout l'impressionne-
ment trop vivement les impressions
sont douloureuses, l'inquiétude
la tourmentent, la font trop
réfléchir sur elle-même et
provoquent des inquiétudes
chimériques.

Le voyage en Europe avait été
suivi d'une très bonne santé
que le voyage en Suisse,
la trop grande vivacité de l'air
des montagnes et peut-être la
saison ont altérée de nouveau.
il est permis d'espérer que le
voyage de mer qu'elle entreprend

THE
JOHN CRERAR
LIBRARY

24

M^{lle} pour retourner dans son pays et dans sa famille, lui rendra la bonne santé dont elle a joui peu de temps après son arrivée en Europe. J'ai peu de conseil à donner, cependant si après son retour la surexcitabilité n'a pas cessé je propose l'emploi des moyens suivants:

et d'abord pendant la route M^{lle} se trouvera bien de mouiller sa tête avec de l'eau fraîche et de frotter fréquemment des bords de pieds chauds avec du sel marin ou du savon. elle surveillera la liberté du ventre et si il se manifestait de la constipation elle aura recours aux lavements. elle évitera de manger des viandes ou du poisson salés. . . .
 Rendue chez elle, après s'être reposée, si la santé s'est pas parfaitement rétablie, M^{lle} se soumettra au régime suivant:

THE
JOHN GREHAM
LIBRARY

3

lever de grand matin l'estiver
avec le soleil, promenade à
pied ou à cheval au sortir du
lit.

tous les deux jours un bain d'une
température agréable de deux
à trois heures de durée préparé
avec deux livres de gélatine
ou huit onces d'eau distillée
de saunders cerise. le jour
intermédiaire M^{re} prendra un
bain de faineuil d'une
température agréable préparé
avec une grande poignée de
morelle ou ^{avec} quelques têtes de
frayot. ce bain prolongera
pendant deux heures.

M^{re} prendra tous les jours
une goute à cinq gouttes
de jus d'eau de poulet ou d'eau
de veau, dans laquelle on
ajoutera pendant l'ébullition
deux ou trois laitues.

quelques jours avant l'époque
menstruelle ou remplacera le
bain de faineuil préparé
avec la morelle ou la tête

THE
JOHN GREER
LIBRARY

4

De javot par un bain de
 sautoil préparé avec l'infusion
 de fleurs de camomille, on
 substituera à l'eau de veau
 et à l'eau de poulet une
 infusion de fleurs d'oranger
 ou de safran ou de sauge.
 Elle doit le nourrir principalement
 de légumes herbacés, de fruits
 cuits, de lactage, elle ne
 prendra qu'un plat de viande
 à l'un de ses repas chaque
 jour, elle évitera tout ce
 qui est sale, épice, ou boira
 que de l'eau légèrement
 sucrée à ses repas, s'abstiendra
 de vin, de liqueurs, de
 café noir et sera sobre de
 boissons aromatiques tièdes
 tels que la thé ou anéth.
 Elle doit faire le plus d'exercice
 possible dans le cours de la
 journée, elle doit se créer des
 occupations actives, des distractions,
 de manière que son esprit
 constamment occupé ne se
 réfléchisse pas sur elle-même,

THE
JOHN GREER
LIBRARY

5

Il faut qu'à l'aide d'occupations
continues ou de distraction
M^{re} Doulle en quelque sorte
et-ait pas le temps de
s'agréer sur les légères
douleurs qu'elle peut éprouver.

Il importe de surveiller
la liberté de venir, de prévenir
la contagion, si celle-ci avait
lieu il ne suffirait pas de la
combattre avec des lavements
mais M^{re} prendra le soir avant
de se coucher, une ou deux
chûtes de trois ou quatre
indigènes ci-dessous

Extrait de l'ouvrage 7/3
cat. 71
faits de Jules n° XXXVI
argenteus

Paris ce 23 août 1838

Esquival

THE
JOHN CREKAR
LIBRARY

Directions - Please to take a purge of fifteen grains of Jalap & ten of Calomel once every week.

On the intermediate days, take a teaspoonful of the following powder every morning and evening. Root of Grom two ounces, ginger, ~~to~~ half an ounce, Rhubarb ^{a quarter of} ~~an~~ an ounce, intimately mixed, and all well powdered.

Bath your feet every night in warm Water.

Drink occasionally of porter, or ale, or sound old wine.

Take from twenty to thirty drops of Laudanum at bedtime when you are Sleepless.

Use gentle exercise daily.

Benjⁿ Rush

Decr^r 7. 1811

THE
JOHN CRERAR
LIBRARY

Notes and Comment

RESOLUTIONS IN MEMORY OF DR. F. C. HOYT.—At a recent meeting of the chief executive officers of the State institutions of Iowa the following resolutions were adopted:—Whereas, on the 21st day of May, 1901, at Kansas City, the heavenly Father, in his inscrutable providence, saw fit to call to rest our beloved co-laborer, Dr. Frank C. Hoyt, late superintendent of the hospital for the insane at Mount Pleasant; and,

Whereas, the quarterly conference of the superintendents is now being held in the rooms of the board of control of state institutions of Iowa:

Therefore, we hereby record our belief that in his death this commonwealth has lost, while yet in his prime in the midst of great usefulness, an indefatigable worker and most skillful superintendent.

Deprived of parents at an early age, his great achievements were wholly the result of an indomitable perseverance and of unrelaxing energy. By experience as the editor of a medical journal and as a demonstrator of anatomy in the college where he graduated; as health physician, and as a general practitioner in medicine: also by post-graduate study, and as pathologist and assistant physician for six years in the state hospital for the insane at St. Joseph, Mo., Dr. Hoyt became well qualified to take charge of the hospital at Clarinda, which he developed into a model institution by six years of most satisfactory service. Three years ago he resigned his position there to locate in Chicago, for the purpose of engaging in private practice, also to establish a secret society, which he had devised, to promote fellowship among physicians, known as the Mystic Order of the Disciples of Aesculapius, but out of a sense of duty he responded to the call of the board of control, after an absence from the state of less than one month, to fill an unexpected vacancy at Mt. Pleasant.

Dr. Hoyt was by nature endowed with rare qualities, which made him eminent as an executive officer. He was an organizer of marked ability, and gave careful attention to details. He was both scientific and systematic in his methods. Although an autocrat in spirit, he was universally respected and admired by his associates. He was scrupulously thoughtful of the welfare of the patients placed in his charge, believing that state care for the insane is none too good for all persons afflicted with mental impairment. He believed that hospitals should be made first class in every particular, and to this end he devoted all his energies. His life work ended early, but it was well done.

We shall long miss the good suggestions often made by him in the councils of this body; we shall long lament being deprived of the friendly intercourse with him, so much enjoyed by all members of this conference. We shall ever treasure in our memories the noble qualities of his character.

To the bereaved widow and the daughters we wish to extend our most sincere sympathy.

GERSHOM H. HILL,

F. M. POWELL,

C. F. APPLGATE,

Committee.

DR. ROBERT J. PRESTON.—Dr. R. J. Preston, the newly-elected President of the American Medico-Psychological Association, was born near Abingdon, Va., in 1841. His early education was obtained in Emory and Henry College but his course of study was interrupted by the Civil War. He enlisted as a private soldier in one of the Confederate regiments from Virginia and served continuously until the close of the war, participating in fifty-four engagements and retiring with the rank of captain. Upon his return home he engaged in the study of medicine and graduated at the University of Virginia in 1867. Subsequently he served in the Women's and Children's Hospital and in St. Luke's Hospital, New York, as an interne for two years. Upon his return from New York he engaged in the general practice of medicine at Abingdon, Va., until 1887 when upon the opening of the Southwestern State Hospital at Marion, Va., he was made first assistant physician. Upon the death of the superintendent, the lamented Dr. Harvey Black, in the following year, he was

made superintendent of the Southwestern Hospital and has since held the position. He received the degree of A. M. from Emory and Henry College. He was made vice-president of the American Medico-Psychological Association in 1900 and elected president in 1901 at the Milwaukee meeting. Although not a voluminous writer, Dr. Preston has contributed a number of valuable papers upon psychiatry. Among them have been: "Associated Dining Rooms—Their Moral and Curative Effect," "Sexual Vices—Their Relation to Insanity—Causative or Consequent," "Syphilis," "Aphasia, with Report of a Case," and "Partial History of the Insane in Virginia." He is a member of the Virginia State Medical Society, of the American Public Health Association, of the Boston Gynecological Association, of the American Medical Association, and of the American Medico-Psychological Association. As a physician, an administrator and a man of marked character, he has accomplished much for the treatment of the insane in Virginia.

LETTERS OF BENJAMIN RUSH ON THE TREATMENT OF INSANITY AT THE PENNSYLVANIA HOSPITAL.—The celebration on May 11 and 18 of the present year of the one hundred and fiftieth anniversary of the founding of the Pennsylvania Hospital gives renewed interest to the annexed letters of Benjamin Rush to the managers of the hospital on the treatment of the insane. The first letter was addressed to the Board of Managers November 11, 1789:

Gentlemen :—Under the conviction that the patients afflicted by Madness, should be the first objects of the care of a physician of the Pennsylvania Hospital, I have attempted to relieve them, but I am sorry to add that my attempts which at first promised some Improvement were soon afterwards rendered Abortive by the Cells of the Hospital.

These apartments are damp in Winter & too warm in Summer. They are moreover so constituted, as not to admit readily of a change of air; hence the smell of them is both offensive and unwholesome.

Few patients have ever been confined in these Cells who have not been affected by a cold in two or three weeks after their confinement, and several have died of Consumption in consequence of this cold.

These facts being clearly established, I conceive that the appropriating of these Cells any longer for the reception of mad people will be dishonourable both to the Science and Humanity of the city of Philadelphia.

Should more wholesome apartments be provided for them, it is more

than probable that many of them might be Relieved by the use of remedies which have lately been discovered to be effectual in their disorder.

With great respect I am, Gentlemen, your friend and humble servant,
Benjamin Rush.

In 1798 he wrote again to the managers in reference to bath-rooms and means of employment:

April 30 1798.

Mr. Coates will please to recollect the following Propositions to be laid before the Managers for the benefit of the Asylum for Mad people, viz : 1st Two Warm and two cold Bath rooms in the lowest floor—all to be Connected ; also a pump in the Area to supply the Baths with Water,

2d. Certain Employments to be devised for such of the deranged people as are Capable of Working, spinning, sewing, churning &c. might be contrived for the women : Turning a Wheel, particularly grinding Indian Corn in a Hand Mill, for food for the Horse or Cows of the Hospital, cutting Straw, weaving, digging, in the Garden, sawing or planing boards &c. &c. would be useful for the Men.

Benj. Rush.

A final communication under date of September 24, 1810, to the same Board of Managers gives an excellent resumé of his views as to the proper treatment of the insane:

Gentlemen :—When our late illustrious fellow Citizen, Dr. Franklin walked out from his house to lay the foundation stone of the Pennsylvania Hospital, he was accompanied by the late Dr. Bond and the Managers and Physicians of the Hospital. On their way Dr. Bond lamented that the Hospital would allure strangers from all the then provinces in America. Then (said Dr. Franklin) our institution will be more useful than we intended it to be—This answer has been verified in a remarkable manner, and particularly in the relief our Hospital has afforded to persons deprived of their reason from nearly all the States in the Union. As great improvements have taken place in the treatment of persons in that melancholy situation, within the last thirty years, I beg leave to lay an account of them before you, as far as I have been able to obtain them, from the histories of Asylums for mad people in foreign countries, as well as from my own experience during five and twenty years attendance upon that class of patients in the Pennsylvania Hospital.

By adopting them, we may extend the usefulness and reputation of the hospital, and thus contribute to add to the high character our city has long sustained for wise and benevolent institutions.

The improvements which I wish respectfully to submit to your consideration are as follows :

1. That small and solitary buildings be erected at a convenient distance from the west wing of the hospital, for the reception of patients in the high and distracted state of madness, in order to prevent the injuries done by the noises to persons in the recent, or convalescent state of that disease, and to patients in other diseases, by depriving them of sleep, or by inducing distress from sympathy with their sufferings.

2. That separate floors be appropriated for each of the sexes.

3. That certain kinds of labour, exercise and amusement be contrived for them, which shall act at the same time upon their bodies and minds. The advantages of labour have been evinced in foreign hospitals as well as our own, in a greater number of recoveries taking place, among that class of people who are employed in the ordinary work of the hospital, than in persons elevated by their rank in life above the obligations or necessity of labour. Exercise and amusements should be the substitutes for labour in such persons. The amusements should be swinging, seesaw, riding a hobby horse, or in what are called flying Coaches, playing at Chess and checkers, listening to the music of a flute, or violin, and in making short excursions into the City or Country. Perhaps kinds of labor might be discovered for every class of mad people, of such a nature as to afford a small addition to the funds of the hospital.

4. That an intelligent man and woman be employed to attend the different sexes, whose business shall be to direct and share in their amusements and to divert their minds by conversation, reading and obliging them to read and write upon subjects suggested from time to time by the attending physician. While we admit Madness to be seated in the mind, by a strange obliquity of conduct we attempt to cure it only by corporeal remedies—The disease affects both the body and mind, and can be cured only by remedies applied to each of them.

5. That no visitors be permitted to converse with or even to see the mad people (the Managers and officers of the Hospital excepted), without an order from the attending physician unless he depute that power to one of the resident Apothecaries. Many evils arise from an indiscriminate intercourse of mad people with visitors, whether members of their own families, or strangers. They often complain to them of the Managers, officers and physicians of the hospital, and at times, in so rational a manner as to induce a belief that their tales of injustice and oppression are true.

Madness moreover which might have been concealed in individuals and in families, is thereby made public. Nor is this all. The anticipation of being exposed as a spectacle to idle and sometimes to impertinent visitors is the chief reason why our hospital is often the last, instead of the first retreat of persons affected by Madness. I would rather die (said a young gentleman of respectable connections in our city, a few years ago, who felt the premonitory signs of that disease) than to be gazed at and pitied, in the cell of a hospital. To prevent this poignant evil he discharged a musquet ball thro' his head, a few days afterwards.

6. That a number of feather beds and hair mattresses, with an arm chair be provided for the use of the cells of all those who pay a liberal price for their board, and whose grade of madness is such as not to endanger any injury being done to those articles.

7. That each of the cells be provided with a close Stool with a pan half filled with water in order to absorb the foetor from their evacuations. The inventor of this delicate and healthful contrivance (Dr. Clark of New Castle, in England) deserves more from humanity and Science, than if he had discovered a new planet. Figure to yourselves, Gentlemen, the sufferings of persons in a small room from inhaling the foetor of their stools for hours after they have been discharged into a Chamber Pot! Contrast the difference of this situation with that in which those persons passed days and nights of sickness and confinement in their own houses!

But other and greater evils have followed the use of Chamber Pots in the cells of our hospitals. A. W. Searle, in Salem, Massachusetts, lost his life, in 1794, in consequence of the mortification of a wound upon his buttock brought on by one of them breaking under him, and there is good reason to believe that the malignant fever of which George Campbell died in the month of August last, was induced by his being constantly exposed to the exhalations from the faeces of mad people, in emptying their chamber pots and cleaning their cells. I am aware that it would be impracticable to carry into effect all the matters suggested in this letter, in the Present State of the funds of our hospital, but the comfort of the mad people, and the reputation of the institution are inseparably connected with the immediate adoption of Some of them. There is a great pleasure in combatting with success a violent bodily disease, but what is this pleasure compared with that of restoring a fellow creature from the anguish and folly of madness, and of reviving within him the knowledge of himself, his family, his friends and his God! But where this cannot be done, how delightful the consideration of suspending by our humanity, their mental and bodily misery.

Degraded as they are by their disease, a sense of corporeal pleasure, of joy, of gratitude, of neglect, and of injustice is seldom totally obliterated from their minds.

I shall conclude this letter by an appeal to several members of your board to vouch for my having more than once suggested most of the above means for the recovery and comfort of the deranged persons under your care, long before it pleased God to interest me in their adoption by rendering one of my family an object of them.

I am, Gentlemen, with great respect and esteem

Your sincere friend and Servant

September 24th, 1810.

Benj. Rush.

PRIZE FOR DR. BROWNRIGG.—We are gratified to announce that the John W. Pray Prize of \$100, offered by the trustees of

the New Hampshire Medical Society for original work in any branch of medicine, has been awarded to Dr. A. E. Brownrigg, an assistant physician at the New Hampshire State Hospital at Concord, for an essay entitled "The Clinical Significance of the Cheyne-Stokes Symptom-Complex."

THE PSYCHOLOGICAL STUDY OF BACKWARD CHILDREN.—Dr. William B. Noyes of New York has published in the *New York Medical Journal* a suggestive article entitled "An introduction to the psychological study of backward children." He believes that we should distinguish carefully between several different classes of mentally defective children in any effort which may be made to improve their condition. He classifies them as follows: 1. Those in whom *the faculty of perception* is deficient. This of course includes those who are blind and deaf-mutes—the so-called idiots by privation. 2. Those who possess powers of perception but *lack power of attention*. The teachability of many defective children depends largely upon the degree to which the faculty of attention can be stimulated. Many of them are incapable of any prolonged effort from an innate weakness of their power to use their minds and to direct their attention. 3. Those who display no special impairment of the faculty of perception or of attention but who have a disease of the will. This disease of the will may be an original sluggishness or lack of impulse or initiative, or it may be the result of a morbid fear which paralyzes the motor impulse, or there may be an excessive impulse which leads to the perpetration of crimes or impulsive acts. There may also be a complete loss of will, as in hysteria or in the mental state which results from hypnotism. 4. Those who are deficient in reasoning faculties, as shown in a lack of good judgment or a disability to meet the growing responsibilities of life. 5. Those who possess normal faculties except the faculty of memory. 6. Those who are morally defective, and finally, 7. Those who suffer from general mental stupidity.

While the whole classification is open to the objection of being an over-refinement and one which in practice might present difficulties, it is useful in that it calls the attention of the teacher to the defective faculty which seems to need special attention and correction. It is altogether probable, too, that the great majority

of alienists would not indorse a classification which was based on a moral defect. Moral defects are invariably associated with and are the expression of mental defects. A well-developed mind associated with moral insanity so-called cannot be conceived of; moral insanity implies a mental defect. The necessity of greater attention to the education of backward children is apparent when the number of such children in every large city is considered. They constitute a perceptible obstacle to the proper advance of scholars from one grade to another and in effect lengthen the general course for all scholars of the grammar grades at least two years. To take such backward children from the schools of a city to special schools where their instruction could be individualized and pursued along psychological lines seems the next "plain duty" of educators.

THE DEATH OF DR. W. L. WORCESTER OF THE DANVERS STATE HOSPITAL.—It seems appropriate for the writer, who had known the late Dr. Worcester more or less intimately for twenty-three years, to attempt to express the sense of personal loss which he, in common with the readers of the JOURNAL and the medical profession in general, must feel at his untimely death. Dr. Worcester possessed intellectual powers of a high order which had been improved by study and training, and was a man of scholarly, studious tastes. He was an omnivorous reader and a keen, incisive writer, with a philosophical turn of mind. He thought independently and in an original fashion, and was never at all inclined to accept the dictum of authority or to bow to the passing fad. He was an acute reasoner and a ready, forceful and convincing public speaker. He was in fact no mean antagonist with tongue or pen. Some of the many book reviews which he published in the AMERICAN JOURNAL OF INSANITY were illuminated by a keen and caustic wit which added much to their attractiveness. He was a diligent student and the literature of medicine was at his command. He was also an excellent physician and was a master of modern methods of diagnosis. The writer has never known a physician who studied his cases more carefully or conscientiously or who knew more about them. He was thoroughly equipped to fill the position of consultant in any large city in internal medicine. He was also an excellent microscopist and

pathologist. The many monographs which have appeared in the JOURNAL OF INSANITY during the past 10 or 15 years testify to his industry and abundant knowledge. One could not know him intimately without being impressed by his fidelity to his convictions of duty. No bribe however large could have tempted him to do what he felt to be wrong. He was equally true to his friendships. He was a scholar, a writer, an able physician, a warm friend, a kind and devoted brother, an affectionate son and a good man. He adorned the profession of medicine and contributed much to its advancement.

H. M. H.

THE MILWAUKEE MEETING OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.—The Milwaukee meeting of the American Medico-Psychological Association will be remembered as one of the pleasantest in the history of the Association. There was a large average attendance at the sessions and close attention was paid to the unusually interesting papers and discussions. The address of the President, Dr. P. M. Wise of New York, published in this number of the JOURNAL, was helpful and as will be seen, deals with questions of vital importance to psychiatry. The annual address by Warren P. Lombard, Professor of Physiology in the University of Michigan, on the "Reinforcement and Inhibition of Nervous Processes" was a masterful production, a review of the newest thought in this branch of the physiology of the nervous system and very helpful and suggestive.

Among the many excellent papers that of Dr. W. J. Mayo of Rochester, Minn., on "Limitation of Surgical Work in Hospitals for the Insane," read by special invitation; that of Dr. Baldwin on the "Need of Better Provision for the Care of Cases of Delirium Tremens and Cases of Doubtful Mental Disease," that of Dr. Brower on "Some Observations in the Treatment of Insanity in General Hospitals," that of Dr. Anne Burnet of Clarinda, Iowa, on "Operative Work among the Insane," and that of Dr. Frost on "Traumatic Encephalitis," may be especially mentioned as deserving of high approbation. Three papers from one institution, that at Kalamazoo, Mich., "The Kalamazoo Symposium," so-called, were of much clinical interest. The paper of Dr. Edwards dealt with "Examination of the Stomach

Contents of the Insane," that of Dr. MacGugan was an exhaustive study of heart disease among the insane, and Dr. Inch reported an interesting "Gastrotomy for the Removal of Foreign Bodies."

Hotel arrangements were perfect. The visit to the quaint Deutscher Club, the reception at Hotel Pfister, the trolley ride and visit to the institutions at Wauwatosa, and the lake ride on the revenue cutter, Morrill, were greatly enjoyed. The highest thanks are due the executive committee for tireless and successful efforts to entertain the members and the ladies of the party.

The next meeting of the Association will be held in Montreal, the second week in June, 1902. This is the week following the meeting of the American Medical Association and in order that better railroad rates may be secured the matter of transportation has been placed in the hands of the Committee on Transportation of the American Medical Association. The Committee of Arrangements is composed of Dr. T. J. W. Burgess, Dr. Geo. Villeneuve, Dr. A. Vallée, Dr. Jas. V. Anglin, and Dr. E. Phillippe Chagnon. Dr. Perrigo, President of the Montreal Medico-Chirurgical Society, who cooperated with Dr. Burgess in extending a hearty invitation to the Association has been asked to assist the local committee.

THE APPOINTMENT OF DR. PETERSON.—All persons who are interested in the care of the insane in the great State of New York and all who have the welfare of the insane at heart throughout the United States must be relieved of a certain anxiety by the appointment of Dr. Frederick Peterson as President of the N. Y. State Commissioners in Lunacy, to succeed Dr. P. M. Wise. Dr. Peterson has made such a careful study of the condition and necessities of the insane and has shown withal such a breadth and sanity of view in his treatment of the problems of psychiatry we are sure that the good work so well begun in New York will not suffer any retrogression at his hands. His appointment from every point of view is an ideal one. If the work of the State Pathological Institute and the Psychopathic Hospital can now be associated and coordinated we believe that a new era in the curative treatment of insanity will dawn.

PSYCHOPATHIC HOSPITALS.—The recent action of Michigan in making a liberal appropriation for the establishment of a psychopathic hospital in connection with the University of Michigan at Ann Arbor offers much promise that something will be attempted and accomplished for early cases of insanity. Thus far no statement of the plans has been made public but we infer that this psychopathic hospital will be organized as a branch of a large general hospital under the control of the University. If the work is wisely directed by men skilled in the detection and treatment of early insanity it must bring great relief to existing institutions for the insane. It is to be hoped that the study of pathology under Dr. Klingman will be closely associated with the work of this new hospital. The difficulty with the pathological study of insanity in Michigan heretofore has been its partial but necessary separation from clinical study. The new hospital affords an excellent opportunity to combine the two.

New York has also made an appropriation for the equipment of a similar hospital to be located in Brooklyn if rumor is correct. This will undoubtedly have the fostering care and guidance of the new president of the Lunacy Commission, who has always felt a keen desire for its establishment. The work commenced by Michigan and New York must extend speedily to other States and revolutionize present methods of caring for cases of recent and curable insanity.

BED TREATMENT OF THE INSANE.—It is a little singular that in the land of Weir Mitchell, alienists should be behind continental Europe in the adoption of the bed-treatment of the insane. The subject was fully discussed in this JOURNAL not long ago by Dr. A. V. Parant¹ in his report of the proceedings of the Paris Medical Congress. The enthusiasm of the alienist members of that body for the new method has not only been maintained, but, if one may judge by contributions to current French literature, grows apace. Now it is Dr. Adam Wizel, of the asylum at Tschiste, near Warsaw, who reports² surprising results following a six months' faithful trial of *alitement*. His noisy wards are now a thing of the past, and mechanical restraint

¹ Am. Jour. of Ins., January, 1901.

² Annales Médico-Psych., March-April, 1901.

is no longer necessary in the treatment of the grosser forms of maniacal excitement. "I regard this treatment," says he, "as a great step in advance in the domain of mental therapeutics. The discovery of the fact that the patient becomes calm by rest in bed is in itself simple enough; but how often it happens that great discoveries are simple, and how many centuries must elapse before they are made! The insane were tortured, persecuted, choked, and nobody dreamed that in treating them humanely we should attain the goal of our desires by the quickest route." Very true this, but it is also true that humane principles of care which prevailed in ancient times have been lost sight of in our own era. Caelius Aurelianus had no patience, for instance, with those who reduced a violent patient to obedience by corporal punishment. He placed his maniacal patient in a chamber moderately light and warm, excluding everything calculated to produce excitement. His bed was to be firm and so situated that he would not be disturbed by seeing persons enter the room. Moreover, he protested with the utmost vehemence against putting patients in chains, trusting to the care and control exercised by attendants. All this in the first century of the Christian era, and now in the twentieth we are re-discovering these same principles of care! Similarly, Hippocrates anticipated the modern theory that toxic agents cause many forms of insanity. He called them "bad humors," it is true, but doubtless he meant the same thing. And on this subject of toxins, coming down to less remote times, what do we find Cox,^{*} an English alienist, saying nearly a hundred years ago? "Indeed, a variety of means might be adopted to excite a new order of symptoms, creating considerable commotion in the animal economy, interrupting the morbid associations and even occasioning temporary disease; and it is highly probable that, in a great proportion of human diseases, health is restored by temporary morbid changes and new specific actions, and that medical men sometimes acquire credit from even the effects of their blunders." Verily, there is nothing new under the sun. In New York State, indeed, the bed-treatment of the insane has been in full operation these many years at the State Hospital at Middletown, where Dr. Selden H. Talcott, in season and out, proclaims the blessed gospel of rest.

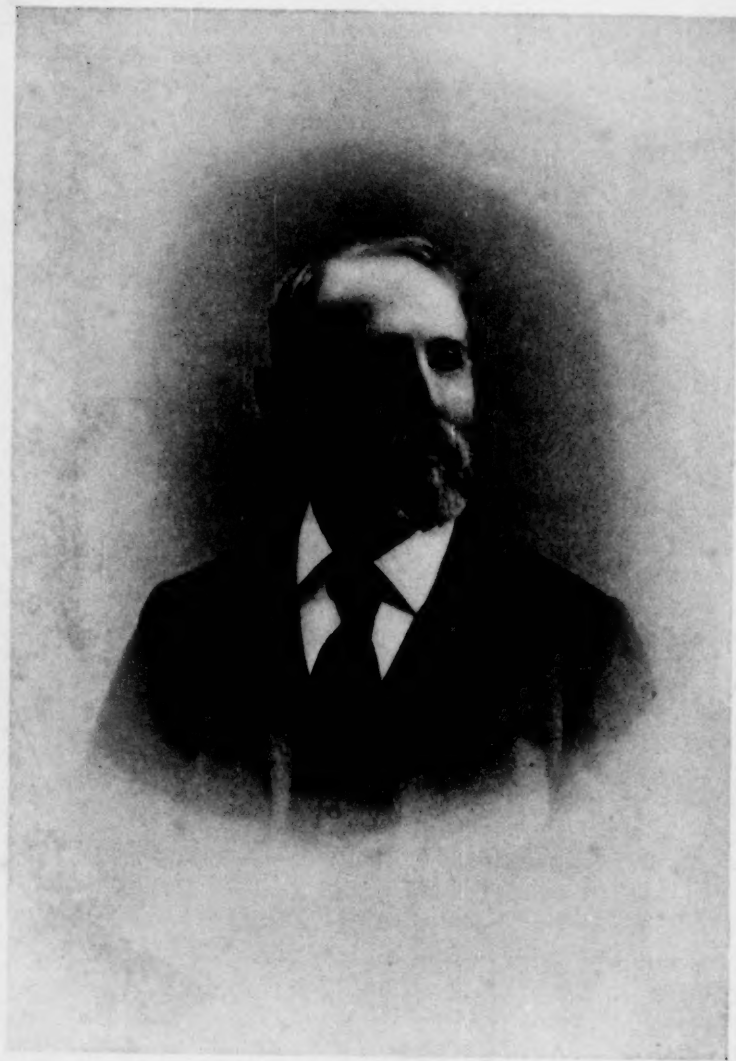
^{*} Cox, J. M. *Practical Observations on Insanity*. Philad'a., 1811.

July

s of
as a
The
t in
that
apse
ted,
we
te."
care
our
with
oral
od-
pro-
that
om.
out-
sed
era,
rin-
ern
ted
me
re-
ing
ght
sid-
or-
d it
ses,
ific
om
ew
ent
the
in

THE
JOHN CHERAR
LIBRARY

JOHN CHERAR
LIBRARY



WILLIAM LEONARD WORCESTER, M. D.

Obituary

WILLIAM LEONARD WORCESTER, M. D.

By ARTHUR H. HARRINGTON, M. D.

William Leonard Worcester, M. D., assistant physician and pathologist at the Danvers Insane Hospital, at Danvers, Mass., died June 9, 1901.

The deceased was born in 1845. His birthplace was Chelsea, Vt. His paternal grandfather was a clergyman, the Rev. Leonard Worcester of Peacham, Vt. His father was a physician, and soon after the birth of his son William, removed to Thetford, Vt., where he practiced medicine and reared his family.

Dr. Worcester was the eldest of a family of nine children. He acquired his primary education in the public schools of Thetford, and was fitted for college at Thetford Academy. He entered Dartmouth College, and graduated from that institution in 1869, ranking second in his class at the end of his course. After leaving Dartmouth College, he went to Washington, D. C., and received the appointment of clerk of the Senate Committee on Pensions. He had determined to adopt the profession of his father, and while filling his position in Washington, he, at the same time, engaged in the study of medicine at the Columbia Medical College, obtaining his degree of Doctor of Medicine in 1873. He then was appointed a medical examiner in the Pension Bureau, and rose to the position of first assistant medical examiner of the pension department. In 1875, he went abroad to engage in the further study of medicine.

Returning to this country in 1876, he engaged for two years in general practice in Burlington, Vt. I have not learned what turned his attention to mental diseases, but he relinquished his practice in Burlington, and entered upon the position of assistant physician to the Michigan Asylum for the Insane at Kalamazoo, where he had a long service of eleven years. He was then ap-

pointed first assistant physician and pathologist to the State Asylum at Little Rock, Ark., where he remained for six years.

During the years that he was an assistant in these hospitals, he had been making a study of pathology, especially pathology as related to mental diseases; and it was his thorough equipment in this branch of medicine which secured for him the appointment of assistant physician and pathologist to the Danvers Insane Hospital in 1895, which position he ably filled until the time of his death.

With this outline of his life, we will touch briefly upon the pathetic circumstances of his death. I think it may be truly said that Dr. Worcester became a victim of the profession which he so studiously followed, and which had absorbed his thought and energies for years. Ten days before his death, while apparently in good general health, he infected a finger of the right hand, undoubtedly while engaged in his researches in the laboratory. On the following day serious symptoms manifested themselves, but all the skill which could be summoned to his aid could not stay the progress of the destroyer.

Until within a few moments of his death, Dr. Worcester followed his own case apparently with nearly all the watchfulness of his consultants. Not one word of complaint or regret at the unfortunate circumstance of his illness was heard to escape his lips. He looked upon approaching death with perfect calmness. He gave directions for the disposal of his valuable library, and arranged other matters of a temporal nature to his satisfaction.

The household were summoned to his bedside to say the last farewell to him, and to each individual, and to each of the medical staff, he had some special word to say. Then he was left with the relatives, who had gathered about him—an aged mother, brothers and sisters—all of his immediate family excepting one brother, Prof. Dean C. Worcester of the Philippine Commission.

We must close the door upon this group in their grief, but we learn that to him it was a happy hour, for, with philosophic composure of mind and body, he said that the short time he had to live he wished to enjoy his friends, and holding them in converse, he thus gave—it was no compulsory yielding—his spirit back to his Maker.

The element of calm resignation to the inevitable was illus-

trated in Dr. Worcester's life in one circumstance, which it is proper to mention here. About the year 1897, he infected a finger of his left hand, with tuberculosis, while engaged in laboratory work. Insidiously the disease increased. He consulted the most eminent men in the country. He was advised to have his hand amputated at once. After mature deliberation, Dr. Worcester decided that he preferred to live a few years with both hands than many years with only one. This disease had been slowly but surely advancing in the left upper extremity during the past three years, but, in this instance again, the Doctor was never heard to utter a word of complaint at his seeming fate.

In analyzing the mental qualities of Dr. Worcester, we should say, that he had naturally a gifted mind, and had enhanced his natural gift by studious cultivation.

From childhood he is said to have been a keen observer. His mind always seemed to be actively engaged. He knew the birds and the flowers. Much of his leisure time he spent in the woods and fields. He was a botanist of no mean attainments. "Speak to the earth, and it shall teach thee," contained an admonition which our friend loved to follow.

While of a retiring disposition, he could be a most entertaining conversationalist. He was thoroughly informed on literary subjects. He was a close reasoner, and his analyses and statements of a proposition, medical or otherwise, were wont to cover the whole ground, and were given with an acumen which was judicial.

There was never a greater lover of justice and a firmer adherent of the truth than Dr. Worcester, and he possessed the moral courage to advocate his honest beliefs, even to his own disadvantage. There was not one iota of the sycophant in his make up. He was all kindness and sympathy in his relations to patients; their protection, and the recognition of the rights of the insane were always uppermost in his mind, in his dealings with them.

As a psychiatrist, Dr. Worcester would rank with the best known of our country. As a pathologist, he was an expert in that branch of pathology which relates to mental diseases. As a writer upon these subjects, Dr. Worcester does not fall short of being an authority. A bibliography of the medical contributions of Dr. Worcester, which has been prepared with the assistance of one of his friends, accompanies this memorial.

Personally, Dr. Worcester did not win by the first impression he produced. He did not wear the polish of a man of the world, nor did not clothe himself with the veneer of the self-seeker. While not easily approachable, association with him revealed a warmth and responsiveness in his nature, and disclosed that he was the true patrician in all that pertained to integrity in his life and character.

He was an exceedingly modest man, withal. His last words to the writer were, "There are a good many things I would have liked to have completed, which I have not been able to do. I have no doubt but that you will find someone to fill my place, who will do the work better than I have done it."

Dr. Worcester never married. He led a life of unselfishness and devotion to his special field, and his death, in the estimation of all who knew him and his life work, will leave a void in the ranks of our profession.

TITLES OF DR. WORCESTER'S CONTRIBUTIONS TO MEDICINE.

Diphtheria in the Michigan Asylum for the Insane at Kalamazoo. Rep. Bd. Health Mich., V. x, 344, 1881-2.

Cases illustrative of the localization of cerebral functions. Am. J. Insan., V. xlv, 66, 1887.

The mortality of epilepsy. Med. Rec., N. Y., V. xxxiii, 467, 1888.

Four cases of pernicious anemia. N. Y. Med. Journal, V. xlviii, 491, 1888.

Delirium. Am. J. Insan., V. xlv, 22, 1889.

Cases of infantile hemiplegia. J. Am. M. Ass., V. xiii, 302, 1889.

Is puerperal insanity a distinct clinical form? Am. J. Insan., V. xlvii, 52, 1890.

Insanity in twins. Am. J. Insan., V. xlvii, 535, 1890-1.

Mechanical restraint in the treatment of the insane. Am. J. Insan., V. xlviii, 476, 1891-2.

The treatment of ulcers. J. M. Soc., Arkansas, V. ii, 438, 1891-2.

The mortality of epilepsy in asylums for the insane. J. Nerv. and Ment. Dis., V. xix, 177, 1892.

Cases of multiple neuritis. *Am. J. Insan.*, V. xlix, 591, 1892.

The organization of hospitals for the insane. *Am. J. Insan.*, V. li, 584, 1894.

Confusional insanity. *Maryland M. J.*, V. xxxii, 353, 1894-5.

Also, *Am. J. Insan.*, V. li, 71, 1894-5.

What is insanity? *Am. J. Insan.*, V. lii, 602, 1895.

A case of paretic dementia of long duration. *Am. J. Insan.*, V. liii, 319, 1895-6.

A case of acromegaly with autopsy. *Boston M. and S. J.*, V. cxxxiv, 413, 1896.

Cases of paraphasia and word deafness. *Am. J. Insan.*, V. liii, 262, 1896-7.

The preservation of serial sections. *Am. J. Insan.*, V. liii, 287, 1896-7.

The psychology of insane delusions. *Trans. Am. Med.-Psycho. Ass.*, V. iv, 200, 1897.

Regeneration of nerve fibres in the central nervous system. *J. Exp. Med.*, N. Y., V. iii, 579, 1898.

The relations of renal disease to mental derangement. *Trans. Am. Med.-Psycho. Ass.*, V. vi, 210, 1899. Also, *Am. J. Insan.*, V. lvi, 275, 1899.

Sclerosis of the cornu ammonis in epilepsy. *J. Nerv. and Ment. Dis.*, V. xxiv, 229 and 263, 1896.

A case of Landry's paralysis. *J. Ment. and Nerv. Dis.*, V. xxv, 299, 1897.

Some difficulties in the retraction theory. *Am. J. Insan.*, V. lvi, 101, 1897.

The katatonic symptom-complex. *Am. J. Insan.*, V. lv, 569, 1898.

Three cases of general paralysis in young women. *Am. J. Insan.*, V. lvii, 127, 1900.

Case of patent foramen ovale in advanced age. *Boston Medical and Surgical Journal*, October, 1900.

FRANK CRAMPTON HOYT, M. D.

Dr. F. C. Hoyt died suddenly and unexpectedly in Kansas City Tuesday, May 21, 1901. He had been ailing for a year past but had been able to discharge his duties at Mt. Pleasant during most of the time. During the winter months, however, he was confined to the house and for a portion of the months of February and March he was an invalid in his room. Early in April, to hasten his convalescence, he visited Denver, his native city, and afterwards Ft. Worth, Texas. Here he had an attack of acute rheumatism, suffered greatly and became completely helpless. A few days before his death he was brought to Kansas City. The immediate cause of his death is thought to have been Bright's disease.

Dr. Hoyt was born in Denver, Colorado, November 17, 1859. He graduated in medicine at the College of Physicians and Surgeons at St. Joseph, Mo., in 1881. Afterwards he pursued a course of study in pathology at the University of Kentucky at Louisville. He returned to St. Joseph in 1885 and became demonstrator of anatomy in the medical school in which he had graduated. He founded and edited the *St. Joseph Medical Herald*. He had a scholarly mind and a talent for writing, as was abundantly demonstrated by the numerous papers which he prepared and read at meetings of medical societies and by his reports as superintendent of the hospitals at Clarinda and Mt. Pleasant. In September, 1887, he was appointed third assistant physician in charge of pathology at the State hospital for the insane at St. Joseph, Mo. Here for a period of nearly six years he carried on the work of the pathological department systematically and efficiently, obtaining and carefully studying much valuable material. As a result of these studies he published subsequently papers on "Pachymeningitis Hemorrhagica," "Tropho-Neuroses in the Insane" and "The Tropho-Neuroses of Paretic Dementia."

In 1893 he was appointed medical superintendent of the Iowa State Hospital for the Insane at Clarinda, and his administration of the affairs of this institution was most successful. His success can be best estimated by the following extract from a letter of



FRANK CRAMPTON HOYT, M. D.

THE
JOHN CRENSHAW
LIBRARY

the former president of the board of trustees of this institution: "I was astonished upon my return from the East to find the sad intelligence of the death of my friend. While I was advised of his ill-health, it was farthest from my mind that he was approaching the end of life. It was my privilege to cast my vote for his election as superintendent of the hospital for the insane at Clarinda. With his youth, energy and adaptability I feared no mistake would be made by the board of trustees in the interest of the unfortunate inmates as well as the State in placing their wardship in his guiding hands. As the ground had to be broken for the establishment of a successful administration on the opening of the institution, we found our friend equal not only to the task but to the emergency of the occasion. The development of his work brought forth the ability for the discharge of the honors and labor we had bestowed upon him, and it was not many months before we discovered that he combined both business and professional qualifications so seldom found in one of his profession; and under his able management the institution grew until it attracted not only the attention of other State institutions but of the country at large. It cannot be gainsaid that he was a fine business man, one renowned in his profession and in the specialty of his lifework, combining gentleness and skill to such an extent that it endeared him not only to his associates and subordinates but to the unfortunates, their relatives and their friends. In his home life he was an ideal father and husband, Christian-like in character and nearly in the duties of his household. In brief, I can only add he was a good man and citizen, a true friend, a loving father, upright and honorable."

While in Clarinda he organized an excellent band to furnish out-of-door music in summer and an orchestra for in-door and winter evening entertainments. He also inaugurated a military drill for patients under a competent drill-master. He also carried mechanical industries for patients, such as manufacturing clothing, shoes, brushes, brooms, and furniture of all kinds to greater extent than any other State hospital of equal size; in addition farm and garden operations were largely engaged in.

In September, 1898, for a variety of reasons he resigned his position at Clarinda and removed to Chicago, but was almost immediately recalled to Iowa to assume charge of the Hospital

for the Insane at Mt. Pleasant, left vacant by the death of Dr. H. A. Gilman. His administration at Mt. Pleasant was also most successful. He introduced many improvements, such as forced ventilation, electric lighting, new and larger kitchens, an associate dining room and an ample water supply.

He gave much thought and labor to the establishment of a fraternal order among physicians known as the Mystic Order of the Disciples of Aesculapius and was also connected with the higher orders of Masonry.

He married, in 1883, Miss Mattie Price Garner, of Richmond, Mo., who with three children survives him.

G. H. Hill.

Book Reviews

The Second Annual Report of the State Board of Insanity of the Commonwealth of Massachusetts for the Year ending September 30, 1900.
(Boston: Wright and Potter Printing Co., 1901.)

The good work accomplished by the State Board of Insanity in 1899 has been continued during the year 1900. We are gratified to learn that the Board reaches the conclusion that the increase of registered insane does not necessarily imply an increase of occurring insanity out of proportion to the growth of population.

The principles which are laid down to govern an extension of provision for the insane are excellent. They are, in brief, a classification of the insane into three groups: (a) the acute and curable insane, (b) the chronic insane of the custodial and infirmary classes, and (c) the colony class of chronic, able-bodied insane who are capable of useful work towards self-support. In carrying out these principles they recommend the improvement of present institutions by the erection of special detached buildings for working patients, near the barns and fields, of infirmary buildings for the helpless and ill patients and of suitable buildings for the accommodation of nurses, apart from patients and outside of the wards. The report is carefully written, and deserves the attention of all who are interested in these problems.

Nursing Ethics for Hospital and Private Use. By ISABEL HAMPTON ROBB,
Late Superintendent of Nurses and Principal of the Training School
for Nurses, Johns Hopkins Hospital, Baltimore, Md., etc., pp. 273.
(Cleveland: J. B. Savage, 1901.)

No one will dispute the fact that the power in the community for good exercised by the trained nurse depends not only upon her technical knowledge and skill, but largely upon her personality. At the same time opinions will certainly differ as to the extent to which tact and adaptability can be learned from books, and it may be that some will feel that portions of the present work should be, even if they are not, unnecessary. But although tact, like the kingdom of heaven, comes largely without observation, careful daily study and practice are necessary before perfection can be attained, and it is at least charitable to suppose that tactlessness is less often wilful than a result of ignorance. To the millionaire who repeated *ad nauseam* the axiom that "riches do not bring happiness," it was aptly retorted that "at least they prevent a great deal of misery," and the impartial critic cannot help feeling that even although

the study of the twelve chapters contained in this book may not convert, as if by magic, the tactless into the tactful woman, at least it may save the honest, painstaking and willing nurse from many a mistake into which she would otherwise be led through lack of knowledge.

What is to be more especially commended is the practical way in which the different phases of nursing life, with its various relations and difficulties, are treated. If physicians, nurses and the public had taken more pains to understand their several duties and responsibilities, together with their several limitations, and had recognized once for all the fact that men and women are and always will be mortal, it would have been far better for all parties concerned. Unfortunately the physician and the public were often too ready to accept the idea set forth by enthusiastic but ill-advised advocates, who would have us see in the trained nurse some sort of a supernatural being, and, hence, to demand of her impossibilities; while, on the other hand, the young nurse, inexperienced in the ways of the world, was apt to take herself too seriously and sometimes failed to appreciate the proper relations of things. In this connection much of the matter found in Chapter XII is admirable and especially opportune.

For the rest, it seems unnecessary to discuss here the various short essays of which, in reality, the book is made up. Suffice it to say that each is based upon a long practical experience and affords abundant food for reflection.

In course of time, when Mrs. Robb's suggestions have been more universally adopted and the ethical side of nursing has received the attention which it deserves from the time that the pupil enters the training school, it may be that this book will be of value only to the laity at large and to those women who wish to understand what they are undertaking when they decide to adopt nursing as a profession. But as things are at present, the superintendent of the training school will find here many a text, and the pupil many a hint which she can follow and thereby save herself not a few bitter moments of mortification; while for the graduate of former years and the public at large, the book will make clear much that has hitherto been incomprehensible and unsatisfactory.

Year Book of the United States Department of Agriculture for 1900.
(Washington: Government Printing Office. 1901.)

The article in this volume which is of special interest to medical men is an excellent one by D. E. Salmon, D. V. M., Chief of the Bureau of Animal Industry, upon "Rabies: Its Cause, Frequency, and Treatment." The author has collected information respecting the prevalence of rabies from different parts of the country, especially from the State Veterinarians, and comes to the conclusion that the disease is common in this country, notwithstanding the skepticism which has been expressed by many medical men as to its existence. His statistics show that rabies develops in the winter as well as in the summer and that it is not ex-

clusively a disease of the hot weather. He believes that it is possible to prevent rabies by providing for the efficient muzzling of dogs, and that all dogs found in public places without tax and with inefficient muzzles should be destroyed. He believes that an efficient and properly constructed muzzle is not cruel. The article is well worth reprinting in a medical journal.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the twenty-second. (Philadelphia: Printed for the College, 1900).

Each volume of the transactions of the College of Physicians contains several papers of special interest to neurologists and alienists. In the present volume we have "The Gastro-intestinal tract in Nervous Disease" by DR. F. SAVARY PEARCE, "Peripheral Resection of the Fifth Nerve," by DRS. KEEN and SPILLER, "Natural History of Tic Douloureux" by DR. C. L. DANA, "A method of Total Extirpation of the Gasserian Ganglion for Trigeminal Neuralgia," by DR. H. CUSHING "Surgery of the Fifth Nerve for Tic Douloureux" by DR. ROBERT ABBE, and "Asthenic Bulbar Palsy" by DRS. BURR and MCCARTHY.

Annual and Analytical Cyclopaedia of Practical Medicine by CHARLES E. DE M. SAJOUS, M. D., and one hundred associate editors, assisted by corresponding editors, collaborators and correspondents. Illustrated with chromo-lithographs, engravings and maps. Volume VI. (Philadelphia, New York, Chicago, F. A. Davis Co., Publishers, 1901).

This volume is the last of the first series of this valuable work. It contains the titles in medicine from "Rectum and Diseases of the Anus" to "Zinc" and is really a series of systematic monographs upon the diseases upon which it treats. A good example of the thoroughness which the subjects are dealt with may be found in the title Syphilis, written by DR. G. FRANK LYDSTON of Chicago. Here we have presented concisely and adequately its Etiology and Symptoms, Modes of Contagion, Secondary and Tertiary Symptoms, Congenital Syphilis, and Treatment with a full resume of the literature under each heading for 1897, 1898 and 1899. The volume is full of the latest thought in all branches of medicine and presents a summary of the best literature. It should be in the hands of every practitioner of medicine.

The Journal of Mental Pathology, edited by LOUISE G. ROBINOVITCH B. ÈS L., M. D. Editorial Board. DRS. N. MAGNAN, A. JOFFROY, F. RAYMOND, CHAS. K. HILLS, JUL. MOREL, C. H. HUGHES and E. RÉGIS. (State Publishing Company, 290 Broadway, N. Y., June, 1901).

This new journal contains as original articles "Psycho-motor Hallucinations in General Paralysis," by MARIE, "Clinical Researches in

Circular Insanity" by FERRARI, "Idiot and Imbecile Children" by ROBINOVITCH, "Suggestion during Natural Sleep" by FAREZ, "A contribution to the fissural Integrality of the Paroccipital; Observations upon One Hundred Brains" by E. A. SPITZKA, and "A case of Verbal Blindness and Deafness and an Autopsy on the Body" by SERIEUX and FURNARIER. The *Journal* is neatly and attractively printed. It is to be commended to all physicians interested in the study of mental pathology.

AMERICAN JOURNAL OF INSANITY

DEMENTIA PRAECOX.

A CONTRIBUTION TO THE STUDY OF HEBEPHRENIA*

By DR. J. CHRISTIAN,

Physician to the National Asylum, Charenton.

ABSTRACT BY

WM. RUSH DUNTON, JR., M. D.,

AND

CLARENCE B. FARRAR, M. D.,

Assistant Physicians, Sheppard and Enoch Pratt Hospital.

Among the insane who populate our asylums there are many whom we are apt to consider idiots and imbeciles, as they appear to be such, and lead a vegetative existence. On studying their histories, however, we may be surprised to learn that in their early youth they were normally, or exceptionally, intelligent children. Every one has met young people in whom various slight mental disorders have rapidly terminated in dementia, or, as we used to say, in idiocy. It is this class, which is not yet fully understood to which I shall devote a detailed study.

HISTORY.

Esquirol, in an article on idiocy, says as follows: "Sometimes one observes children who were born with the best of health; their mind expands as their body develops. They show a marked degree of susceptibility, are lively, irritable, choleric,

* From "Annales Medico-Psychologique," Jan. to Oct., 1899.

possess a brilliant imagination and a precocious intellect; their minds are constantly on the *qui vive*. This activity, not being in harmony with their physical forces, these creatures quickly run their course, their mind comes to a standstill, it acquires nothing more, and the hopes which they have given vanish. This is accidental or acquired idiocy."

This description applies to the cases which I propose to study. For some time dementia of young people was considered as nothing but a complication provoked by fortuitous causes, independent of the mental disease itself.

Later, Morel, J. Falret, Legrand, du Saulle, and Magnan and his pupils opposed this theory and held that dementia of young people was a sign of degeneracy which must be attributed to heredity.

In 1863, Kahlbaum described a form of mental disease rapidly terminating in dementia not appearing until the time of puberty and under the influence of the changes coincident with this state. This he called hebephrenia. Very little notice was taken of his work until 1871, when Hecker, one of his pupils, published the first detailed observations by means of which he attempted to construct a clinical picture of hebephrenia. (Virchow's Archiv, 1871.) He says "Hebephrenia is a mental affection which makes its appearance at the age of puberty, manifesting itself by alternate or successive fits of mania and of melancholia, and progressing rapidly towards dementia." Both he and Kahlbaum thought that the peculiar feature of the malady was its appearance during the puberal epoch.

Etymologically the term hebephrenia means simply the insanity of puberty. The most cursory observation suffices to establish the fact that during adolescence every form of insanity may occur. There would not therefore be one hebephrenia but as many as there are different varieties of insanity. This was evidently the first objection to the theory of Kahlbaum, and he attempted to meet it by withdrawing what had been too positive in his first description. He proposed to recognize two forms, the classic form, terminating in dementia, to be called hebephrenia vera, and another less severe, and curable, to be called heboidophrenia.

Another objection was that certain young people became

demented without showing the classic symptoms of hebephrenia.

Krafft-Ebing, Sterz, Finck, and Kovalewsky consider hebephrenia a degenerative psychosis. Serbsky, of Moscow, pointed out its similarity to katatonia. Hack Tuke considers it a form of moral insanity. Schule regards it as an imbecility and makes a distinction between it and dementia præcox.

Kraepelin admits of two forms, the one which exists without any concomitant symptoms, the dementia being established gradually by simple effacement of the intelligence; the other, more frequent, in which the dementia is more or less complete and is preceded by a group of nervous symptoms, of delirium, etc. He is inclined to apply to the first only, the term hebephrenia.

Scholz, of Bonn, makes the point that hebephrenia attacks especially those individuals who previously were entirely, or almost, normal. Heredity, he asserts, is absent in many cases; finally intellectual weakness may be arrested in its development at all degrees of dementia. Scholz is one of the few authors who does not find that heredity plays the principal rôle in the etiology of hebephrenia.

One must conclude then that what Kahlbaum and Hecker have described is a clinical entity, though the name given might be criticised, and their description applies only to a certain degree. Its occurrence is relatively frequent. In nineteen years' service at Charenton, entirely among male patients, I have been able to collect one hundred and four cases. Hecker placed it as 2.8 per cent and Krafft-Ebing as low as .25 per cent of admissions to hospital care.

One of the most constant and important features of the disease is the tendency to sudden impulses. This is a dominating symptom and persists even to the period of terminal dementia. It was not described by Kahlbaum or Hecker, but has been noted by Sterz, Finck, and Krafft-Ebing.

It seems to me that the term Juvenile Dementia or Dementia Praecox is a term more preferable than hebephrenia, though it matters little by what name it is known, provided we are agreed on the disease itself.

To recapitulate, there are:

1. A constant appearance at the age of puberty.
2. Various delirious symptoms at the beginning.
3. Constant sudden impulses.
4. A rapid termination in a dementia which is more or less complete.

DESCRIPTION OF THE DISEASE.

Synonyms.—Hebephrenia, Idiocy, Dementia Præcox, Juvenile Dementia.

A. HEBEPHRENIA GRAVIS.

When the dementia has become most marked, one sees the patient immobile, cast down on a bench, the eye melancholy, the look vacant, and the physiognomy without expression. Oblivious to everything that is going on about him, he neglects his person; slovenly, untidy, filthy, he tears his clothing, drags himself on the ground, dribbles saliva, forgets to blow his nose, eats gluttonously, bolts with voracity all the food which is offered him. He seems to understand nothing, grins foolishly when spoken to, frequently bursts out laughing without reason. Such a patient may be continually expectorating and a salivary sea forms at his feet; another allows the saliva to accumulate in his cheeks. One will make bizarre gestures, balancing himself forward and backward, striking unusual attitudes. Another utters inarticulate cries, puts out his tongue and makes faces. One fills his pockets with all he can find—buttons, pebbles, wisps of straw, rags, excrement. Some patients eat their excrement and drink their urine. Their sensibilities seem blunted; they are quite indifferent to extremes of temperature, remaining in the sun, cold or rain without seeking shelter; they do not seem to feel any pain from the wounds and bruises which they are liable to sustain.

Frequently they are in a state of absolute mutism, or only speak a few words at intervals. But this is not because of any speech defect; they do not speak because they have nothing to say, perhaps they have forgotten even the most common words.

True ataxia or paralysis does not exist, but muscular rigidity, hypertonus, and stereotyped attitudes are often prominent symptoms.

In a word, the picture of dementia præcox, when the disease

has reached its greatest degree, is that of the idiot reduced to a vegetative existence (third stage of Esquirol). But, nevertheless, in this state of absolute indifference to all that passes before them, there remains an impulsive tendency which is manifested by sudden crises or paroxysms. One tears his clothes in shreds, and tears with a true rage before one has time to even interfere. Another suddenly seizes any object at hand, plate, glass, shoe, and, at haphazard, throws it at his neighbor, through a window, at a mirror, or even, without saying a word, rushes upon his neighbor, or anyone who is passing before him and gives him a kick or a blow.

Such is dementia præcox, hebephrenia in its most complete form, such is what appears in the following cases:

Case I.—When I took the service of Charenton, in 1873, I found among our old patients a man of about sixty, pale, swollen, lymphatic, never speaking, never doing anything to occupy himself, living in his corner, an absolutely vegetative life. He entered in 1848, having lived in private hospitals for many years. At intervals the patient uttered little cries, a kind of clucking, leaped into the air, clapped his hands violently, then fell back into his inertia. In the morning, at rounds, he glided up to me, pressed my arm, then, with evident satisfaction, returned to his place. This was his manner of showing his affection for me, for if one prevented or hindered his approaching me, he was agitated, became restless, and angry; he only became calm when he had been permitted, in his way, to give me welcome.

I should have considered this patient an idiot, supposing that he had never spoken, that there was total absence of intellectual faculties. My surprise was not small when I learned, by study of the case-book and the documents with which the family furnished me, that N— was the grandson of the most famous painter in the century, that his brother had been one of the politicians of most mark of the second empire; that he himself, after a childhood which had shown nothing abnormal, had made in a Lyceum of Paris a brilliant record, and had been laureate of the general council. It was not until about the age of seventeen that his mind began to be affected, that he had become absent-minded, then eccentric, extravagant, finally ac-

possess a brilliant imagination and a precocious intellect; their minds are constantly on the *qui vive*. This activity, not being in harmony with their physical forces, these creatures quickly run their course, their mind comes to a standstill, it acquires nothing more, and the hopes which they have given vanish. This is accidental or acquired idiocy."

This description applies to the cases which I propose to study. For some time dementia of young people was considered as nothing but a complication provoked by fortuitous causes, independent of the mental disease itself.

Later, Morel, J. Falret, Legrand, du Saulle, and Magnan and his pupils opposed this theory and held that dementia of young people was a sign of degeneracy which must be attributed to heredity.

In 1863, Kahlbaum described a form of mental disease rapidly terminating in dementia not appearing until the time of puberty and under the influence of the changes coincident with this state. This he called hebephrenia. Very little notice was taken of his work until 1871, when Hecker, one of his pupils, published the first detailed observations by means of which he attempted to construct a clinical picture of hebephrenia. (Virchow's Archiv, 1871.) He says "Hebephrenia is a mental affection which makes its appearance at the age of puberty, manifesting itself by alternate or successive fits of mania and of melancholia, and progressing rapidly towards dementia." Both he and Kahlbaum thought that the peculiar feature of the malady was its appearance during the puberal epoch.

Etymologically the term hebephrenia means simply the insanity of puberty. The most cursory observation suffices to establish the fact that during adolescence every form of insanity may occur. There would not therefore be one hebephrenia but as many as there are different varieties of insanity. This was evidently the first objection to the theory of Kahlbaum, and he attempted to meet it by withdrawing what had been too positive in his first description. He proposed to recognize two forms, the classic form, terminating in dementia, to be called hebephrenia vera, and another less severe, and curable, to be called heboidophrenia.

Another objection was that certain young people became

demented without showing the classic symptoms of hebephrenia.

Krafft-Ebing, Sterz, Finck, and Kovalewsky consider hebephrenia a degenerative psychosis. Serbsky, of Moscow, pointed out its similarity to katatonia. Hack Tuke considers it a form of moral insanity. Schule regards it as an imbecility and makes a distinction between it and dementia præcox.

Kraepelin admits of two forms, the one which exists without any concomitant symptoms, the dementia being established gradually by simple effacement of the intelligence; the other, more frequent, in which the dementia is more or less complete and is preceded by a group of nervous symptoms, of delirium, etc. He is inclined to apply to the first only, the term hebephrenia.

Scholz, of Bonn, makes the point that hebephrenia attacks especially those individuals who previously were entirely, or almost, normal. Heredity, he asserts, is absent in many cases; finally intellectual weakness may be arrested in its development at all degrees of dementia. Scholz is one of the few authors who does not find that heredity plays the principal rôle in the etiology of hebephrenia.

One must conclude then that what Kahlbaum and Hecker have described is a clinical entity, though the name given might be criticised, and their description applies only to a certain degree. Its occurrence is relatively frequent. In nineteen years' service at Charenton, entirely among male patients, I have been able to collect one hundred and four cases. Hecker placed it as 2.8 per cent and Krafft-Ebing as low as .25 per cent of admissions to hospital care.

One of the most constant and important features of the disease is the tendency to sudden impulses. This is a dominating symptom and persists even to the period of terminal dementia. It was not described by Kahlbaum or Hecker, but has been noted by Sterz, Finck, and Krafft-Ebing.

It seems to me that the term Juvenile Dementia or Dementia Praecox is a term more preferable than hebephrenia, though it matters little by what name it is known, provided we are agreed on the disease itself.

To recapitulate, there are:

1. A constant appearance at the age of puberty.
2. Various delirious symptoms at the beginning.
3. Constant sudden impulses.
4. A rapid termination in a dementia which is more or less complete.

DESCRIPTION OF THE DISEASE.

Synonyms.—Hebephrenia, Idiocy, Dementia Præcox, Juvenile Dementia.

A. HEBEPHRENIA GRAVIS.

When the dementia has become most marked, one sees the patient immobile, cast down on a bench, the eye melancholy, the look vacant, and the physiognomy without expression. Oblivious to everything that is going on about him, he neglects his person; slovenly, untidy, filthy, he tears his clothing, drags himself on the ground, dribbles saliva, forgets to blow his nose, eats gluttonously, bolts with voracity all the food which is offered him. He seems to understand nothing, grins foolishly when spoken to, frequently bursts out laughing without reason. Such a patient may be continually expectorating and a salivary sea forms at his feet; another allows the saliva to accumulate in his cheeks. One will make bizarre gestures, balancing himself forward and backward, striking unusual attitudes. Another utters inarticulate cries, puts out his tongue and makes faces. One fills his pockets with all he can find—buttons, pebbles, wisps of straw, rags, excrement. Some patients eat their excrement and drink their urine. Their sensibilities seem blunted; they are quite indifferent to extremes of temperature, remaining in the sun, cold or rain without seeking shelter; they do not seem to feel any pain from the wounds and bruises which they are liable to sustain.

Frequently they are in a state of absolute mutism, or only speak a few words at intervals. But this is not because of any speech defect; they do not speak because they have nothing to say, perhaps they have forgotten even the most common words.

True ataxia or paralysis does not exist, but muscular rigidity, hypertonus, and stereotyped attitudes are often prominent symptoms.

In a word, the picture of dementia præcox, when the disease

has reached its greatest degree, is that of the idiot reduced to a vegetative existence (third stage of Esquirol). But, nevertheless, in this state of absolute indifference to all that passes before them, there remains an impulsive tendency which is manifested by sudden crises or paroxysms. One tears his clothes in shreds, and tears with a true rage before one has time to even interfere. Another suddenly seizes any object at hand, plate, glass, shoe, and, at haphazard, throws it at his neighbor, through a window, at a mirror, or even, without saying a word, rushes upon his neighbor, or anyone who is passing before him and gives him a kick or a blow.

Such is dementia præcox, hebephrenia in its most complete form, such is what appears in the following cases:

Case 1.—When I took the service of Charenton, in 1873, I found among our old patients a man of about sixty, pale, swollen, lymphatic, never speaking, never doing anything to occupy himself, living in his corner, an absolutely vegetative life. He entered in 1848, having lived in private hospitals for many years. At intervals the patient uttered little cries, a kind of clucking, leaped into the air, clapped his hands violently, then fell back into his inertia. In the morning, at rounds, he glided up to me, pressed my arm, then, with evident satisfaction, returned to his place. This was his manner of showing his affection for me, for if one prevented or hindered his approaching me, he was agitated, became restless, and angry; he only became calm when he had been permitted, in his way, to give me welcome.

I should have considered this patient an idiot, supposing that he had never spoken, that there was total absence of intellectual faculties. My surprise was not small when I learned, by study of the case-book and the documents with which the family furnished me, that N— was the grandson of the most famous painter in the century, that his brother had been one of the politicians of most mark of the second empire; that he himself, after a childhood which had shown nothing abnormal, had made in a Lyceum of Paris a brilliant record, and had been laureate of the general council. It was not until about the age of seventeen that his mind began to be affected, that he had become absent-minded, then eccentric, extravagant, finally ac-

tually insane. Placed in a private hospital, he became rapidly demented, and wound up at Charenton in a state of complete intellectual abeyance, where I saw him thirty years later. He died in 1889 of congestion of the lungs, almost seventy years old.

Case 2.—X—, entered in 1884, aged twenty-four years. His paternal grandfather died of cerebral apoplexy; a paternal uncle was insane. His father (recently dead) suffered with chronic eczema. His mother was very nervous, and of remarkable artistic talent; a sister was extremely intelligent. X— himself had been a well-endowed child; had no sickness but whooping cough at the age of seven. He received his degree with honor, and passed the examinations for the Ecole des Chartes with high marks.

Now during the time he had been preparing for these examinations he had several times shown signs of cerebral fatigue; he had had some transitory delirious crises which had dissipated without leaving any traces. The attacks became progressively more frequent; he imagined "that he smelled badly, that his comrades avoided him and regarded him with disgust;" he reverbigerated portions of his studies, complained of his health and said that he would die. He became more and more degraded, would not leave his room, refused all nourishment. He never had sexual excitement, on the contrary, felt absolutely cold towards women; it is doubtful if he even practiced onanism. The symptoms became worse. X— was placed in a private hospital, then at Charenton. He has been there now for more than fourteen years without any change in his condition. He never speaks, laughs foolishly, eats like an animal, tears and soils his clothes. No trace of sentimental affection is left, visits of his relatives being received absolutely indifferently; he never emerges from his state of apathy. Physically, he was a man of medium height, well developed, and all the organs seemed normal; he merely presented a slight facial asymmetry, the ears had bad edges, stood out from his head. His health was perfect.

Case 3.—Seated on a bench, his hands on his knees, T— sits motionless the entire time. He has to be brought to table, dressed and undressed. He mechanically pulls out his

hair and beard, or even tears off the skin of his face and hands, making them all bloody, without apparently feeling any pain.

In 1879, T— was thirty-six years old. The only son of aged parents (his father died suddenly at seventy-eight years; his mother died almost at the same age, completely demented); he had done well in his studies, and, receiving his bachelor's degree, prepared for the higher normal school. All his masters predicted success for him, when suddenly he stopped his work, complaining of pains in the head, of fatigue, of insomnia. At nineteen years of age, T— was in such a state of insanity that it was necessary to place him in a private hospital.

Passive and inert so long as he is shut up, he became violent and dangerous as soon as he was out. On a sudden impulse he left the home of his parents and started out at hazard, running straight before him without any object until he fell with fatigue and exhaustion. In 1871 he entered Charenton. He died of marasmus at the age of fifty years.

The number of young people whom I have thus seen become demented is large. Happily all do not reach the state where they lose all intelligence, moral faculties and acquired ideas. Some continue to be interested in drawing or music, or play games. There is in dementia praecox the whole scale of mental deterioration. The above cases remind one of the complete idiot, one who has come to the last degree of intellectual and moral degradation. The cases following may be compared to imbeciles:

Case 9.—C—, born in 1848, was received into the military medical school; there he worked but little, occasionally indulged in excess in alcohol and finally received his diploma. During the war of 1870 he was commissioned as assistant surgeon. In 1874, according to his family, he had brain (?) fever, following which his mind failed, and he was placed in a hospital for insane, from which he came to Charenton in 1881. C— had all the signs of a weak mind. Very careless of his attire, in spite of his pretensions to elegance, polite toward those around him, he walked about with a package of books under his arm, and an enormous portfolio stuffed with papers. He was continuing his studies, he said, and about to publish some important works. He covered reams of paper with illegible

writing; these were memoirs for the institution. As much as one could decipher of it was absolutely incoherent. The memory of C—— was weak; he was confused, said little, could not carry on a conversation; he was in a word a self-satisfied and harmless imbecile. He died of pneumonia at forty-four years.

I have been told that there did not exist in C—— any hereditary predisposition; that his childhood and adolescence were without any peculiarity; that he had been a good student at college, as I can readily believe, as he had been received at the medical school. But it was just at that time that he stopped working, began drinking, and this was unquestionably the beginning of his sickness. The cerebral fever in 1874 was nothing more, I think, than the crisis of delirium from which began his downfall. After this crisis he became an imbecile, and what is remarkable, as I have noticed in all analogous cases, this imbecility attains almost at a single stride the degree which C—— presented, remaining thenceforth stationary without progressing. Such was C—— at his entrance, such we found him eleven years after at the time of his death. He had no physical defects.

Case 10.—T—— came from a family in which all the men (the father and several uncles) had remarkable ability for all the arts, poetry, drawing, etc., linked, it is true, in several of them, with great eccentricity. He himself in his childhood had been a musician of the first order, and though young had composed music of real value.

At eighteen months he had a serious illness (diarrhœa with symptoms of typhoid), but from this time he had excellent health and normal physical development. T—— became a large young man, very dark, of pleasing physiognomy. His disposition was varying, unstable, he lacked in general, perseverance and ability for consecutive thought and action. His classical studies had been mediocre, he had neglected everything for his music in which he excelled.

At the age of twenty years he wished to enter the seminary. At that time he had a crisis of mysticism. In the first year he showed great application, in the second year absolute idleness; he was obliged to leave. He pursued the same conduct when placed by his father in a banking house, he began full of zeal;

at the end of several weeks he neglected his office, absented himself without motive, was absent for several days; when he returned he was unable to give any excuse for his conduct, or to say what he had done or where he had passed the time.

In 1884 (he was then twenty-three), following an insignificant discussion with his parents, he suddenly threw open the window and jumped from the third floor to the street. He sustained several fractures of his limbs, which healed without leaving any troublesome traces.

Following this escapade he spent eighteen months in a private hospital, whence he left to be placed in a family. He intended to pursue a course in a conservatory of music. During several weeks all was well; he then recommenced his eccentricities, and it was necessary for him to return. He was then sent to a pension in the country; one day, opposed by his hostess, he rushed upon her, a knife in his hand; he was then brought to Charenton (1888).

Of medium height, well formed, smiling physiognomy, T— had black hair and beard, the piliary system being extremely developed. No physical defect was found. The intellectual plane is notably low, he is not able to carry on a conversation, only speaks of trivial things, laughs at everything said. He is able to play and preserved in part his skill of execution. But what he composes is made up of incoherent and ordinary reminiscences. He passes his time in drawing, especially the heads of women. These drawings are poor, but he attaches great value of them. To give an idea of his intellectual status, I cannot do better than show a part of a letter, written to his father in 1893, when his grandmother died at an advanced age.

"My dear father (I copy exactly):

Alas! The death of grandmama was anticipated; When one has come to such an age, those about us generally have a feeling of anxiety; for my part, that is the state in which I was before my last journey south, the successive letters which I have received have not dimmed these presentments. Poor grandmother after having brought up all the family and a numerous family too, after having brought together, sheltered and protected them, for the ancestors must be protected, she was compelled to banish herself down there, far away, her country to

be sure, but no longer the country of the heart's remembrance, nearly all her childhood's friends dead, their families scattered like her own by the marriages of the younger members, who in their egoism, break the patriarchal circle to recast it in smaller groups, etc."

One sees in this letter the remains of a cultivated intelligence, but enfeebled and become incoherent. One divines also the affectionate sentiments which he wishes to express, the reference which he makes to the past. But how much of this is wavering and disconnected. T—— composed poetry. He has paid his respects to me with a collection of forty sonnets. I choose one at random:

IDYLLE NEGRE.

Sous le chaud soleil qui rayonne,
Cachée a l'ombre du Sumac,
La dormeuse mêle au tabac
Sa crinière épaisse de lionne.
Le frais éclat des fleurs sillonne
Sa robe d'indienne en sac;
Rien ne se trahit du hamac,
Rien que son regard d'hémione.
Hereux le charmant bengali
Qui conte à sa maîtresse brune
Des nouvelles de son ami.
Hereux le magnolia pâli
Qui sur son sein noir à demi
Pointe comme, en la nuit, la lune.

It can be seen that one must be very indulgent to find either poetry or even versification in this. I would merely say that these verses were given to me in October, 1897. They proved that the dementia had been stationary since 1893.

A characteristic which I have yet to speak of is the following: T—— has a very amiable and tractable disposition, but at certain periods and without apparent motive, he becomes irritable and disputatious. If at such time any one speaks to him, he becomes pale, answers coarsely, making threats. These crises are transitory and he seems to have no recollection of them. For about a year he has shown symptoms of pulmonary tuberculosis.

In the pathogenesis of the disease there are three periods to

be considered. The first, seen at the beginning of puberty, may be called the period of incubation. The second is the period of delirium. The third and last is the period of terminal dementia.

The childhood of those who are doomed to dementia praecox presents, as a rule, no peculiarity worthy of remark. They develop normally, answering all that can be expected of them. I do not agree with those writers who think that dementia praecox can only develop in those who have already shown an evident predisposition. In only nine of my cases was the intelligence mediocre, but not to the point of preventing their acquiring some education. Moreover, 25 per cent of my patients were remarkable for their exceptional aptitude for language, music, painting, mathematics, etc.

II. DELIRIOUS PERIOD.

It may happen that a gradual effacement of the intelligence and a feeling of distress in the head may be the only symptoms discoverable in this period. It is first noticed that the child who has hitherto done his work regularly becomes idle, absent-minded and lacks application. He becomes irritable and seeks to be alone. He may complain of fatigue, of pains in the head, of vertigo. Insomnia and anorexia are present. This state may be prolonged for weeks and the patient then becomes hypochondriacal. He takes a dislike to his family. Onanism or sexual perversion is usually present, a normal sexual appetite being uniformly absent. The tendency to mysticism is not rare. Ambitious ideas are frequently present, but always show juvenility. Their morbid vanity drives them to many foolish acts. Frequently they have ideas of persecution with or without characteristic hallucinations, not systematized and disappearing with the onset of dementia.

Case II.—F—, father alcoholic, died of cerebral lesions (G. P.). Paternal grandfather died at twenty-six of some brain trouble. Mother very nervous.

Childhood presented no peculiarity. F— was a good student and entered the Ecole Centrale without difficulty. The first year he advanced fifty-six points, the second year he made twenty. He was then obliged to interrupt his studies to serve

his year of military service in the artillery. When he returned to school he was quite a different person. He had lost everything he had accomplished, took wretched notes, and very soon showed such a degree of mental incapacity for any sort of work, that his family were obliged to take him away. When he returned home, F—— presented a condition of idle, indifferent inertia, having previously been a passionate lover of the chase and one of the most enthusiastic members of the Alpine Club, he now declared himself exhausted, sick, incapable of the least effort. He kept his bed a part of the day, did not even come to meals. He then became irritable, did not wish to receive any attention, threatened and even attacked his parents, and destroyed his furniture. It became necessary to take him to a hospital. On the way he had an access of fury and shattered and tore to pieces everything in the carriage. His father and the two men who accompanied him were in a constant hand to hand struggle, and only succeeded in mastering him by the most strenuous efforts. He was brought to us in this excited condition, and for a few days his disordered violence increased. I feared an acute delirium. Gradually, however, under the influence of prolonged baths, laxatives, and good food (which for a long time we were obliged to give him by tube), he grew quiet and at once the scene changed. He still did not wish to eat, but it was because he feared to injure others or because he had nothing wherewith to pay his board. He wanted to expiate his crimes, passing the day on his knees, reciting prayers and singing hymns. He came at last to repeat the same phrase for three or four hours on end: "Ave Maria, gratia plena." At night he gets up, throws himself on his knees at the foot of his bed and demands that he be taken to the chapel. He goes naked into the yard and declares that he is the Christ; that a voice has said to him "Thou shalt be Pope."

After several weeks this delirium passes away in its turn, the religious ideas and hallucinations disappear and the patient gains flesh. It is then that one appreciates how much the intelligence has suffered. F—— demands to return to school to finish his course; he goes to the concierge and asks him to open the door; that he can quite easily find his place in the study hall. Otherwise he is perfectly indifferent and accepts the situation

with perfect serenity. One day, a year after his admission, he stopped talking, and from that time, in 1892, nothing has been able to draw him out of this mutism for which he will give no reason. In other respects he seems well satisfied, is smiling and well disposed towards those about him, but never replies to anything that is said to him except by gestures (for several months now he has been talking, 1898). None of the stigmata of degeneration are seen in this young patient; he is tall, of a robust appearance, well developed and a decided brunette. Organs all normal. F—— has not sunk into a condition of complete dementia. The two letters which I reproduce here written respectively in 1892 and 1897, demonstrate that he has lapsed into a mild hebephrenia, and that the intellectual weakening has remained stationary. The first letter follows:

My Dear Mama.—Although having changed my locality I have changed my habits hardly at all, and hope to become convalescent very soon. But we have such good quarters here that that does not matter much. I hope that with rest my health will come back; moreover, it is not necessary to be constantly on the go like Tartarin and one can live very well and contented in one place. I much enjoy country life, and the atmosphere is always pure hereabouts. I have thought that I gleaned from your replies that you had no hope of seeing me embrace a profession, but I am still waiting for something to turn up which shall decide me to take some step for the better. As for money matters, I have full confidence in my studies: yet for the present I need a new hat to go out in, and a little money or a few sous in my waistcoat; we are too near Paris to do without it.

Receive my most affectionate sentiments to all.

The above was written in 1892. The following, written in 1897, I was only able to obtain after reiterated requests:

My Dear Mother.—I don't know whether I am right or wrong in treating lightly things which my books treat seriously. They are so tedious. Get yourself some trusty supporters in your neighborhood if you have the means of recompensing them.

I need a few little useful articles to repair my effects; my stomach is always in bad condition.

To you the calm, to us the tribulations; nevertheless your nephews will never know the misfortunes of many other children.

I am far from having accomplished the long series of fashions which I am revising, and I admire the great progress of our musicians, the works of our architects.

Profit by these last days to revive your youth in the open air.

Your devoted son.

Evidently there is in this second letter more of incoherence than in the first. Nevertheless the dementia has not markedly progressed.

It happens, moreover, as one might expect, the dementia established, there still remain traces of the preceding delirium. This is especially true in the following case:

Case 12.—When P—— was entered at Charenton he was thirty-seven years old; he had been insane for more than twenty years. His father, a former professor had reached an advanced age with intelligence unimpaired. His mother died insane in an asylum. Two brothers and a married sister living and well. P—— was a good student and became a Bachelor of Letters, having an aptitude for literature, but it appears that the effort necessary for attaining his degree exhausted all his natural force of resistance, inasmuch as from that moment he gave up all effort and began to give expression to his peculiarities. He left his family in order to live by himself. He stupidly and rapidly dissipated his maternal heritage, and had to have a guardian appointed. His life became nothing but a series of extravagances. One moment he dreamed of becoming a priest and entered the seminary, remaining but a few months. Later he conceived the idea of emulating the blessed Labre, did not wish to live except by alms and allowed himself to get in a condition of incredible filth.

At admission P—— was pale, thin, did not speak, remained in a corner with bowed head, the saliva flowing from his mouth, mumbling certain words without sequence, fragments of prayers. He stripped himself nude in the water closet, got up at night to kneel before his bed, refused food, was filthy. Three months after a pneumonia supervened, carrying him off in a few days.

To recapitulate, after an initial period of fatigue, of enervation, or neurasthenia, the delirium appears but is varying, changing and transitory. There may be ideas of persecution and grandeur, or mystical delirium, but systematized delusions are not present. All these delirious manifestations, evanescent and uncertain, bear the imprint of the intellectual weakening which they conceal for a time.

Among other forms is that described by Baillarger as Mono-

mania with unimpaired consciousness. The following case is typical:

Case 13.—D— was born of parents who are still living and well; he has a brother who is a soldier. There is nothing particular about his childhood. He received a primary education, and enjoyed good health, excepting a slight varicocele which he was obliged to carry in a suspensory. His character was timid and he sought solitude. At the age of fifteen years he was placed in a boarding school, where he contracted the habit of onanism, but it was not until the age of seventeen years that he began to become eccentric; his tendency for isolation became more marked; he would not see his parents, refused to go to the table, became irritable and even made threats. At the same time he became a collector. At first he collected all the newspapers that he could procure, classified them and made them up into voluminous packages; then he gathered up all sorts of papers; finally he collected pieces of glass, of pottery, of metal, and placed them in chests which he placed in the garret, and would not allow them to be touched. Very soon his mania extended to bones; at first he collected those which he found in the kitchen, then those of the street. He began to frequent the cemetery where he hoped to find a large supply; but the police interfered, and he was sequestered for the first time in 1892, at the age of eighteen years. After several months his family tried him at home; but his intelligence was enfeebled, the mania for collecting persisted and the violent attacks became more and more frequent. He had to be brought back, became inert, indifferent, untidy. His time was passed in collecting and putting in his pockets odd articles which he was able to appropriate, such as pencils, pens, papers, pebbles, etc. He died suddenly at the age of twenty-five years. I was not allowed to make an autopsy.

D. had marked cranial asymmetry; he would never allow me to take any measures of his head, becoming angry whenever any one tried to examine him.

To this group belong those cases which have been described as phobias. One observes all varieties, but they are nothing more than individual manifestations present in one, absent in another. What is well shown is the tendency to sudden impul-

ses. Any indifferent fortuitous circumstance may accidentally decide what form the impulse will take. It may be homicide, suicide, or incendiarism. A common form of impulse is the irresistible desire for movement which suddenly seizes a patient when he leaves his dwelling without object and is found two or three days later in a distant locality not knowing how or why he came there.

Case 14.—G., born in 1872, came from a family of simple farmers. He had a brother and a sister who remained in the village, and worked with their parents. Having shown, it appears, some aptitude for the sciences they put him to study, he presented himself for admission to the Ecole Polytechnique. Three times he failed; before presenting himself again he had to serve in the artillery; finally, at the extreme limit for age, he was received; he was then twenty-four years old. Soon after entering the school he showed eccentricities, inattention, weariness. At the first vacation, he forgot to return at the appointed time, which brought about suspension. This light punishment, although well merited, gave him a true crisis of despair; he cried out that he was dishonored, lost, that nothing was left to him but to die, and tried to hang himself. On the advice of a physician he was taken to Val-de-Grace, where all his symptoms became aggravated, and when, at the end of a few days, he was brought to Charenton, he was in a state of profound stupor.

Very emaciated, he had an earthy color, the features drawn, his face painfully pinched, he held himself motionless, his head hanging, allowing saliva to run from his mouth, forgetting to wipe his nose. He would not answer any questions, absolutely refused to eat, and resisted when dressed or undressed. From time to time he would utter certain words or fragments of sentences in a low voice: "I am lost,—they will shoot me." For many weeks he had to be fed with a tube; he then took on a little flesh and began to eat alone. But nothing, after about eighteen months of treatment, was able to change his mental condition. G. now presents the picture of apathetic dementia which generally characterizes the grave form of hebephrenia. For a long time he has shown the characteristics of "flexibilitas cerea." Whatever attitude he may be made to assume, no

matter how painful, such as holding his arm in the air or extending it horizontally, he remains in this for a number of minutes.

G. is a large young man, of regular visage, hair and beard black and very thick. He is without any physical defect; for the last few months (1898) he has emaciated and grown feeble. I believe that he has a rapid tuberculosis.

Case 15.—Father insane, for many years in an asylum, two brothers, one died at nineteen years of galloping consumption; the other, eccentric, intelligent but not able to fix himself to anything. The patient was received at the Ecole Polytechnique, but had to repeat one year. After leaving the school he was stationed at the Artillery School at Fontainebleau, and began to show signs of mental derangement. He thought that his comrades were laughing at him, whispering when he passed by; one influenced him, one made him suffer electrical disturbance, etc. After making several accusations he handed in his resignation and returned to his family. It was not long before he took a dislike to his mother, accusing her of being in league with his enemies and of putting drugs in his food; he also threatened her with his revolver. Placed at Charenton, he made himself conspicuous by his eccentric conduct; in the first part of the time he spoke but very little and in incomplete sentences, relative to his ideas of persecution; he made many difficulties about eating, claiming that the food was poisoned. When his mother brought him any delicacies, such as candy or chocolate, he would not touch it until she had tasted it before him. He sought solitude, seeking the darkest corners, where he remained without moving. Little by little he began to affect the most eccentric positions; he would hold himself motionless, standing on one leg, the body bent forward, the look fixed, obstinately directed at the same place. He seemed to suffer whenever he was touched, opposing with considerable resistance when any one tried to make him change his place or attitude. Even in bed he lay in a very strange fashion, hanging his head out of the bed and supported on the sideboard in a way which must have fatigued him. The mutism had become complete; he had to be fed with a tube. He was filthy and allowed saliva to dribble from his mouth. This condition was prolonged; it was

not until the third year of his sojourn that he began to emaciate; he became more and more feeble; a pneumonia (tuberculous) carried him off in a few days; at the beginning of this affection gangrenous spots appeared about the sacrum.

He was a tall young man, thin, a brunette. He had a small head, small ears with adherent lobule. Otherwise there was no physical defect.

Case 16.—E. came of a family which had a great deal of tuberculosis and insanity. His father was an eccentric man, vain and of little intelligence. He was twenty-two years old and studying theology, when he showed a religious exaltation which became more and more marked. He had visions and revelations; he had to be placed in an asylum. I do not know anything about him until several years after the beginning of his mental trouble; he was then in a state of complete intellectual abeyance. He rested motionless on the armchair where he was placed, his eyes obstinately closed, the head falling forward, the mouth open, letting saliva dribble from it, the limbs stiff, and affecting a forced attitude in which they would remain for hours. When one tried to open the eyelids he contracted them with a singular energy. He was absolutely careless about his person. Never during the two years which I observed him have I known him to utter a single word. He died when nearly thirty years old of pulmonary phthisis.

The above cases have an added element, the muscular rigidity, and form a true picture of Katatonia in the last period as described by Kahlbaum. It is recently suggested that Katatonia is the same disease as dementia praecox and the latter term would seem to be more appropriate. I have come to the conclusion that dementia praecox not only includes the two forms which I have described, the grave form (analogous to idiocy), and the lighter form (analogous to imbecility), but also that the grave form itself comprehends two varieties, the simple, in which the muscles are not affected, and the katatonic in which the whole muscular system is disturbed in its functions.

III. PERIOD OF DEMENTIA.

In the generality of cases the attack of delirium of whichever form, maniacal or melancholic, quiets down after a certain

period and this may lead the friends of the patient to believe that there is a possibility of a cure. A careful examination shows that there is a mental reduction and the patient no longer has any control of his attention. The quietness does not last long, new delirious symptoms follow and each time leave the intelligence more impaired, until finally it becomes apparent to all that the dementia is irremediable.

When the attack begins with stupor the passage into dementia is made in a more gradual manner, so that for a long time the diagnosis may be uncertain. It seems to me that, in this case, it is generally the complete dementia, apathetic or katonic, which will follow. Incomplete dementia is more apt to succeed after a beginning with mania or melancholia, whichever form it may have been, and whatever may be the degree of intellectual effacement, during the terminal period no other delirious manifestations are observed than the impulsive crises characterized by acts of sudden violence, without motive. These become more and more rare, and farther and farther apart, until finally, after several years they disappear almost completely.

The physical health may remain excellent in these patients and it is not rare to see them arriving at an advanced age.

ETIOLOGY.

We give the name puberty to that period of life which marks the passage from childhood to adolescence.

Various authors have tried to show that the period of puberty renders the individual especially liable to mental disorders but they do not prove this satisfactorily.

At the same time it may be conceded that while the puberal evolution of itself is not a factor in disease, at this period the economy is especially delicate and susceptible. Nevertheless the determining causes must always be sought for from without.

Dementia praecox assuredly has its special etiology and if one could penetrate into the depths of the brain one would find in all my patients a single and identical alteration at the bottom, but our knowledge does not reach so far and we are forced to content ourselves with an approximate etiology. A great number of different causes must be taken into account whose

action again can only be explained by that other unknown quantity predisposition. In fact, whatever cause we hit upon we must recognize that this same cause has been brought to bear on many other individuals of the same age, and living in the same conditions, and that they have remained unharmed.

The first question therefore to decide is whether there exists a predisposition to dementia praecox, and in what it consists, in other words, the so-called constitutional causes must be investigated.

I. CONSTITUTIONAL CAUSES.

a. *Age*.—The age of puberty varies not only with the individual but also according to race and climate. Various authors have fixed various periods but if we allow ten years, from fifteen to twenty-five, we shall be as near as possible to the actual limits. Among one hundred and four of my patients, fifty-six were attacked before twenty, only twelve at about fifteen or sixteen, and the remaining forty-eight after twenty.

b. *Sex*.—From my experience I have concluded that girls are less exposed to this disease than boys, but this difference is tending to disappear owing to the more advanced education of women and their consequent greater exposure to determining causes.

c. *Heredity*.—I have found direct heredity in nineteen of my cases, father insane in eight cases, mother in nine, grandparents in two. In eleven cases mental disease was present in a brother, sister, uncle or aunt. Five patients report aliens in their family of unknown relationship. A total of thirty-five cases of established heredity. To these should be added ten cases of neuropathic heredity. Mother nervous and hysterical in eight cases, father epileptic in one and alcoholic in one. Forty-five of my patients have aliens or neuropaths among their ascendants or near collateral relatives (exactly 43 per cent). All of these, however, were normal children, apt in receiving instruction. In six only burdened by heredity was there noticed in earlier years a mediocre intelligence and a certain idleness of spirit, not, however, preventing their attending schools and colleges. A much larger number, namely twenty-two, have possessed faculties above the average and a few have shown remarkable

aptitude for music, painting and mathematics. There were no signs of degeneracy worthy of the name.

Thirty-seven of my patients had normal brothers and sisters.

Of these eight were born during 1871, having been conceived during the latter months of 1870. It is believed that the physical or moral suffering of the mother while pregnant may count for more than the fixed constitutional health of the parents.

d. *Acquired predispositions*.—A child born in the best surroundings may in its early infancy become the victim of an accident, or of a serious illness, following which it remains in a state of cerebral inferiority, which terminates in dementia praecox after several years. In eleven cases I have recorded a severe attack of typhoid fever before the sixth year and in five cases brain (?) fever. Six children were victims of cranial traumatism. Finally must be mentioned the eruptive infectious fevers, rubeola, scarlatina, variola, etc., which often leave in their train more or less serious permanent conditions. Furthermore, diseases which act as predisposing causes when they occur in early infancy may become occasional or direct causes when they occur in adolescence, and be shortly succeeded by dementia.

II. OCCASIONAL CAUSES.

Daraszkievicz calls attention to the fact that in the etiology of dementia praecox he has come across none of the moral causes such as grief, jealousy, etc. I believe that the physical causes play an important rôle, and that they are very diverse. They have one feature in common and that is their debilitating effect. Therefore dementia praecox might well be classified among the exhaustion psychoses described by Binswanger.

a. *Onanism*.—The effect of this practice seems to me to be unduly exaggerated, for it is so common a practice that it cannot be blamed for much that is attributed to it. It is only exceptionally that onanism appears as the principal factor of disease.

b. *Surmenage*.—In a general way this factor is brought into play whenever more is demanded of an organ than it is able to give, no matter what may be the cause of its insufficiency, whether it is inherent in the organ or depends on causes outside of the latter. Surmenage does not consist alone in the

greater or less amount of work *per se* that is required of an organ. On the contrary it depends solely on a disturbed proportion between such work, and, if I may say so, the rendering capacity of the organ.

A brain well constructed and judiciously trained from infancy is able to sustain without embarrassment a considerable and prolonged effort provided there is nothing wrong on the physical side of the economy. Cerebral overburdening is especially found in country children born to live in the open air, and to cultivate the fields, but whom an ill directed ambition transplants to the cities and urges to a student's life.

Case 19.—This patient was the only son of a well to do farmer, who wished to make him a tutor to allow him to escape military service (under the old regime). For a similar reason he married at 21 a cousin-german, also an only child. No heredity. Patient became a teacher and took up his first charge in a village at some distance from his home, and where he was ill-satisfied. He had fifty pupils and they were a source of much worry to him. At this time he was attacked with a mild form of scarlet fever. On recovery, there appeared persecutory delusions, and he declared that he had enemies in the village, who had reported him to the inspector. Also complained of violent headaches. One day he had a violent (hysteroid) attack, threw himself on the floor, uttered loud cries, throwing arms and legs about and rolling around the room. He was carried to bed where his excitement increased, continually crying out and trying to choke his wife. He was taken to Charenton several days later, where at first his condition seemed to improve. The improvement, however, was evanescent, and patient rapidly and completely demented, appearing entirely indifferent, making no exertion, not caring for his person, subject to sudden attacks of agitation in which, he tore his clothing to tatters and destroyed everything at hand. Later these crises became less frequent. Patient was transferred to a provincial asylum completely demented. He was a young man of large stature, well built, dark complexion bearing no stigmata of degeneracy.

Binswanger has observed exhaustion psychoses in young people, boys and girls in the developmental period. (Servants,

farmhands, etc.) Compelled to a considerable degree of labor, getting insufficient sleep and nourishment, finally after various psychic symptoms they fall into a state of complete cerebral reduction of which dementia praecox appears to be the type.

Case 22.—M— followed a lyceum course and received his bachelor's degree, at which time he gave out, successfully passed examination for service, however, and soon after entered the army. Patient never had had any serious illness. Parents living and well, although M. is very nervous. One brother and one sister married and have children all in good health. Patient is of large frame, well developed with no degenerate stigmata. First symptoms appeared after several months regimental life. Physical and intellectual activity diminished. Fatigue was easily induced followed by lassitude, bizarre ideas, hypochondriacal preoccupations. There even appeared hallucinations of vision and audition. He declared that he had seen a "white lady" who had told him to follow her. Alcohol or other excesses not known whether present or not after his year of service. Having been better and worse by intervals, with frequent signs of convalescence, patient returned to his family, tried to give him occupation by securing him a clerkship with an insurance agent. He was unable to remain. Condition rapidly declined and patient was brought to Charenton, in a state of almost complete stupor. Neither listening, nor speaking or taking any care of his person, he seemed oblivious of everything that was going on around him, and remained sometimes for hours together standing in a corner, preferably behind a door. Appeared to hear voices coming from the wall and the play of his facial expression indicated the profound attention that he paid them. When he is made to walk he advances straight in front of him, if he encounters an obstacle, that is, table or chair, he overturns it, when this is impossible as in case of a wall or tree, he stops and makes indefinite steps without changing his place. He is subject to sudden causeless attacks of violence in which he strikes out in any direction, kicks aimlessly, tears his clothing, throws his shoes from him. One day he dashed with lowered head through a glass door and fell on a piano in the adjoining room. He escaped with a few scratches. On admission M. was 22 (1880), since then dementia has become

complete. Patient still retains his violent tendencies and is inclined to kick any one who passes near him.

To complete this chapter on etiology it remains to investigate whether there is any special importance to be attached to the functions peculiar to women and whether menstrual disorders have the importance generally attributed to them.

Menstrual disorders are not always present and when they are, are not the cause of the cerebral disorder, but are dependent themselves on deeper constitutional disturbances. I have observed several young girls with dementia praecox, in the service of my colleague Ritti. Among them the menstrual function was normal and the hebephrenia was due to the same general causes as among the young men. Surmenage of every variety has occurred. It is among those who have undergone examinations for commissions as teachers and have been subjected to the fatigue of their occupation that dementia praecox is likely to appear.

Case 28.—Mlle. Eugenie admitted to national asylum at Charenton, October 20th, 1880, age 20. Nothing significant in patient's history except convulsions at two and again at five. Physical and mental development normal. Received advanced training and passed brilliant examinations, at the Hotel de Ville. The fatigue and mental stress which always accompany these ordeals, as well as the requisite labor preceding had not affected her health. At this time her mother became insane and had to be taken to an asylum (was soon after taken to Charenton with symptoms of chronic mania with erotic and persecutory ideas). A few days later Mlle. E. fell into a depth of sadness with total insomnia, refusal of food, imaginary fears, she was about to die, her father was to die, etc. Visual hallucinations were present. Her mother appeared to her as a spirit. She had also suicidal ideas, she wanted to throw herself from the window to escape death. This mental state which was present on admission alternated with periods of great excitement, but the most prominent feature of her delirium was the idea of death. She dreamed of corpses, saw coffins, etc. She tried to strangle herself with her handkerchief, or would run after other patients and wind her handkerchief around their necks. Patient then fell into a condition of

stupor with paroxysms of agitation, violent impulses to destructiveness and only at long intervals showing any glimmer of reason. Gradually she became absolutely incapable of taking care of herself, to dress or undress and became very untidy. This degradation which has been in process of evolution for more than ten years has caused patient to resemble a true idiot, when one sees her at present seated motionless on a bench, lips half open, saliva escaping, now and then a burst of laughter or a clapping of the hands, again becoming furious and beating her head, showing no other sign of intellectual activity than a few disconnected words, eating untidily and gluttonously, and unable to perform any act whatever without assistance, one inevitably thinks of idiocy. It is, however, an acquired idiocy. • Menstruation has always been regular.

DIAGNOSIS.

Nothing is more difficult than to distinguish at first sight a precocious dement from an imbecile or an idiot. The general appearance, carriage, and manners are the same in all. One may say, however, that as a rule physical stigmata are present in idiocy and sometimes more marked malformations while they are found but very exceptionally in dementia praecox. Such stigmata are cranial malformation, ill-formed features, and abnormalities of various organs. Nevertheless these are by no means constant findings. I have now under observation several young idiots whose physical exterior is nearly normal and this is true of a great many imbeciles.

A mistaken diagnosis is really of little importance, in either case the only thing that can be done is to render their existence as pleasant as possible. The only sure diagnostic point lies in the previous history. The idiot and imbecile have always remained in the same condition from birth. The precocious dement on the other hand has during a varying period enjoyed the use of his intelligence. Likewise in the precocious dement one sees remaining glimmers of his intellectual past with more or less clear recollection which is never the case with the idiot. In this is to be found a valuable element in difficult diagnosis. But in the absence of exact information one may easily be confused.

Diagnosis may be difficult in cases beginning with mental confusion or stupor, the katatonic form. The simple or melancholic stupor can be cured. A correct diagnosis is therefore important. Some aid may be found in the mode of onset. Stupor, properly so called, usually begins abruptly following a sudden profound mental perturbation. Dementia praecox on the other hand established itself gradually and is only apparent after other phases of delirium.

Generally hebephrenia or dementia praecox is easy to distinguish from the symptomatic dementia of adolescence for example, (1) epileptic dementia, (2) dementia following directly upon severe cranial traumatism, (3) alcoholic dementia (which is of course very rare in young people). In all these cases the etiologic element itself furnishes the diagnosis. The real difficulty is to give an opinion at the onset of the malady, but generally a decision can be reached in a short time.

Those cases which have been described under the name of Juvenile General Paralysis seem to me to be nothing more or less than hebephrenic dementia, but this is not the place to discuss the matter

Prognosis.—Unfavorable. The disease is incurable but life is not jeopardized.

Course.—Duration.—Event.—The course is rapid, the dementia being established in a few weeks or months. In many cases after an initial delirious crisis there is a period of calm which is always of short duration. The dementia is rapidly established and then remains stationary, the patient frequently living to an extreme old age. In those cases which have come to autopsy, while cellular and tissue changes have been found in the encephalon nothing peculiar to dementia praecox could be noted.

Treatment.—There is no curative treatment, but as soon as an adolescent shows symptoms of malaise and cerebral fatigue, it is necessary to suspend all intellectual work and all application in any pursuit whatever. Rest for body and mind, a vacation in the country, in the open air, moderate exercise, substantial food, such are the general means which must first be resorted to, and to which may be added hydrotherapy, tonics and tissue-builders.

While there is no curative treatment, may we at least hope for preventive measures? In a general way I answer yes. In surrounding a child from the tenderest age, with the most favorable condition of development both physical and intellectual, in most carefully avoiding fatiguing his body and mind by ill proportioned labors, in a word, in seeing to it that he lives in an hygienic environment best adapted to his constitution, one will have done one's utmost to carry him without accident through the crisis of puberty. In children burdened by heredity, double precaution is demanded.

IS LEGAL RECOGNITION OF GRADUATED RESPONSIBILITY PRACTICABLE?¹

By A. B. RICHARDSON, M. D.,

Supt. Government Hospital for the Insane, Washington, D. C.

I believe I am correct in asserting that the basis, upon which all legislative effort to regulate human conduct in civilized countries rests, is, that for a given offense a certain penalty shall be inflicted. Arbitrary classification has been made of what are considered deflections from good conduct, giving numerous degrees of offense, each with a definite penalty attached. An offense of a certain kind and a certain degree has a corresponding kind and degree of punishment. The law can only approximately determine degrees of guilt and recognizes in most cases that extenuating or aggravating circumstances may vary the degree of offensiveness in any given act, so that much latitude is ordinarily allowed the judicial authority charged with rating criminal conduct in fixing the penalty. At the same time I believe it is true that this latitude is always for the purpose of fixing as accurately as possible the grade of the individual offense and of making its penalty to correspond, rather than a recognition of any variation in the responsibility of different individuals for an act of the same character under precisely similar circumstances. The variation recognized by the law is a variation in grade of criminal conduct—a variation in the degree of divergence from right conduct.

It is true that as administered by the courts the presiding judge does sometimes attempt to include among the extenuating circumstances the capacity of the particular mental organization which is found in the offender. The penalty inflicted is sometimes modified because of a belief that full capacity does not

¹Read at the Fifty-seventh Annual Meeting of the American Medico-Psychological Association, Milwaukee, Wis., June 11, 1901.

exist. The law, however, takes no cognizance of this limited capacity except when it is held to exist in such degree as to carry entire irresponsibility. As far as the law is concerned, an offender is entirely responsible and amenable equally with all other citizens for his acts, or wholly irresponsible and relieved by its provisions of all penalty for criminal offenses. Even as recognized by the courts, in their attempt to meet the requirements of justice by conceding individual variation in capacity among citizens of a community, the only solution of the problem is a variation in the degree of penalty inflicted. The kind is seldom changed. If it is a fine, it is for a lesser amount. If imprisonment, it is for a shorter period. This, I believe, we are safe in assuming, is the only manner in which graduated responsibility is recognized by the courts.

The present inquiry will be directed to the following considerations: First, is the recognition of graduated responsibility before the law, necessary or advisable? Second, if so, is it practicable, and if practicable, how shall it be recognized?

As we find humanity exemplified in individual form, it will require but little investigation to determine that great variations exist in mental capacity and in the degrees of development of moral sense, short of entire incapacity and moral idiocy. A study of offenders, in particular, discloses frequent instances of deficiency in both mental and moral capacity where we should hesitate to attach entire irresponsibility before the law. Let us concede, then, the fact, and say that such graduated responsibility does actually exist among human beings.

This being the case, it must follow as a logical deduction, if justice is to be administered with approximate equality, that the recognition of this graduated responsibility by the law is at least advisable, and, we may fairly say, necessary. The question remaining therefore is, first, can the law-making power safely establish any basis upon which this graduated responsibility may be recognized, and second, in what manner can it be practically carried into effect? Here comes the rub. Here lies the chief intricacy of the problem. All men differ, we will concede, both in mental and moral capacity. Many show evident defect in one or both of these directions without entire incapacity, and this we also concede. We admit, too, the desirability of having the law

recognize these facts, and that for each individual there should be measured just such responsibility before the law as his relative capacity warrants. In the adjustment of penalties it is easy to say, all on this side of the line are equally responsible and wholly so, while all on the other side are equally irresponsible and wholly so. We may know that there exist among individuals the great and the small, the strong and the weak, passing from the one extreme to the other by infinite gradations, but as long as we are required only to separate the goats from the sheep, we do not encounter much difficulty. It is when we come to classify these goats among themselves that the task becomes well nigh insurmountable.

Before undertaking to answer these questions, let us for a moment undertake the always easier task of pointing out wherein the present attempts of the courts to meet the requirements of a recognition of graduated responsibility do not accomplish the desired end.

The ultimate object of all attempts to inflict penalties for wrong-doing is to prevent the recurrence of similar acts, either in the individual himself or in others. In persons of limited mental capacity, or defective development of the moral sense, the danger of repetition of a similar offense, under similar conditions, is greater than in the fully developed or entirely healthy individual. In such cases a shorter period of restraint, or a lesser fine, only leaves the person the more opportunity to return to the same environment, or to resume the same relations that resulted in the first offense. The penalty, too, even if of equal degree of severity, has, in such a case, less retarding influence. It is certainly illogical to attempt to secure for the person a more equitable dispensation of justice merely by sooner returning him to that condition which will favor a repetition of the offense which will again call for a punishment. On the other hand, if it is recognized that the offender is of relatively limited mental or moral capacity, to inflict upon him a punishment of like kind and degree with that which a more fully developed person, with larger responsibility, would merit, would neither be just or reasonable, because *he* does not merit it and because it would probably fail of accomplishing that for which all punishment is intended. Further, to mete out to such a person a punishment of like kind,

but lesser degree, would still less effectively restrain him from a repetition of the offense. His relatively limited moral capacity renders him less amenable to such control and more likely to repeat the act under similar conditions. If he is to receive from the law strict justice on the one hand, and on the other, to be so treated as to most effectually guard against a recurrence of the offense, some other form of penalty must be utilized. The troublesome question is to determine what this shall be and what, if any, rules the law can lay down for the guidance of the courts and juries in determining the form of punishment to be used and the manner in which it is to be applied.

In different forms of crime I believe different methods of meeting the conditions will be necessary. Where homicidal tendencies exist in those of defective moral sense, who are yet controlled in their crime by more or less rational motives, and who cannot be wholly relieved from responsibility, there should be a considerable variation from the usual practice. It may well be questioned whether capital punishment in such a case would be justifiable either for its retarding influence on others of like organization or because justice requires its infliction. Life imprisonment will effectually safeguard society, and probably exercise more of a retarding influence on others of like type than would a spectacular execution. On the other hand, when homicide has been committed by such a person, under circumstances which might, in one of higher mental and moral development, justify a lesser grade of punishment, I believe greater care should be used in the scrutiny of the structure of the individual, and more caution exercised in turning him loose upon society. An extension of his term of sentence rather than its shortening will probably frequently be necessary, yet the practice of the courts is often the reverse.

Let me illustrate by a case which lately came to my notice. A man of plainly limited mental capacity, who had shown evidence of easily aroused emotional outbursts during his life, which had sometimes taken the form of somewhat ridiculous attempts at suicide, but who had worked at common labor fairly well, after repeated solicitations of marriage to his landlady, a widow of somewhat higher intellectual organization, one night, when a further request had been refused, assaulted her with a

small knife, making a few flesh wounds, and then stuck the knife in his own throat but without serious result. Now in a well-developed person, wholly responsible for his acts, this crime of assault with intent to kill would rightfully carry the penalty of a certain number of years in confinement, the length of term being determined by the presence or absence of extenuating circumstances, and, perhaps, the extent of the injury. In the person under consideration the fact of his defective capacity should not be such an extenuating circumstance as would shorten the term of confinement. On the contrary, the term should be lengthened. Such a person is unsafe ever to be at large. If he is so manifestly defective as to rightly belong to the unsound, he should be confined with them; if not so deficient as to be properly classified with these he should still be restrained, made as nearly as possible self-supporting and society protected from a repetition of such offense against it. To some extent the same is true of all offenses which carry a penalty of imprisonment. If a limited moral capacity is present, more care should be exercised in permitting the person to return to the environment that produced the original act, and in all such cases the release, when it is necessary, should not be unconditional. There should still be such control as will admit of the person's immediate sequestration as soon as evidence is shown of any tendency toward a similar offense, without waiting for the occurrence of such an act as would ordinarily be required to permit the law to take charge of him. Whether this sequestration shall be in a special institution or a reformatory, or among the mentally disordered, is a minor consideration and to be determined by a study of the degree of deficiency present, and of the probable effect of this or that form of restraint. If there is comparatively little deficiency present, and if the person seems fairly capable of being impressed by the kind of punishment inflicted, it is much better not to send him to an insane hospital. He is out of place there, and neither will he himself be properly influenced by his restraint, nor will he exercise a wholesome influence on those by whom he is surrounded.

All offenses against morality in those of relatively limited capacity should call for the same careful scrutiny of the perpetrator. I believe, too, that a single offense of this character in

such persons should be taken more frequently to indicate a propensity from which society should be protected. Such offenses are becoming so frequent in individuals whose character and past acts have given ample warning of the propensity that it would certainly seem that the law should step in and try to anticipate acts that experience shows to be almost inevitable. Why should the law wait for repetition after repetition of acts inimical to society before protecting it, when the organization of the individual, the character of the act and the motives that prompted it, all point to an almost certain recurrence even after the first offense. No defective in whom any injurious propensity seems to exist, as shown by the motives behind any given offense, should ever thereafter be given unrestricted liberty, but should, in one way or another, be under the surveillance of the law. In crimes against property perhaps greater leniency may be shown than in crimes against the person or against morality, but even here, as we know, the index of the offense varies greatly in persons of different type of structure, and just in so far as the act shows a *tendency* to such acts and is out of proportion to the temptation present, in the same degree should the law attempt to guard against a repetition by supervising the future of the offender. Indeterminate sentences and commitments to intermediate penal or reformatory institutions should be more frequent in such persons. In other words, it would seem that the law should make a more careful study of the organization and capacity of the individual in attempting to mete out justice to him, and at the same time prevent a repetition of the act, rather than as now to direct all its inquiry toward ascertaining the degree of the offense itself. The same act may have very different meanings in individuals of different structure, and, as far as indications exist and can be classified, so far should they be followed by the court. A sensible judge can do much to supply the deficiency of the law in this respect, and it is to the judiciary, in my opinion, that, from their experience and study, we must look for that wholesome influence upon legislators that must ultimately bring about the desired flexibility in the inflictions of punishments and in the supervision of offenders.

It does not appear that thus far the subject has received sufficient consideration to enable any reliable basis to be established

by legislative authority whereby variations in the degree of development of moral sense may be recognized. The trend is in this direction, however. The recognition of the habitual criminal type and the application of indeterminate sentences are first steps. They recognize that these persons are structurally different from others, and that they require special measures of repression for their offenses. I simply urge that another step be taken that legislators, judges and jurors make a more careful and more intelligent study of the types of offenders; that they strive to vary the penalty not only to meet the degree of the criminal act but also to fit the individual himself.

It seems to me that it is not entirely an impracticable subject. Why cannot legislative authority direct that the court be empowered to instruct the jury to consider the degree of development and moral capacity of the individual as well as the character of the act with which he is charged, and to direct further that if the jury finds the act, together with the probable motive which instigated it, and the character of the individual, to indicate such a propensity, or such weakness, or such moral deficiency, or such criminal bent, as would, in their opinion, render it unsafe for the person again to be given unrestricted liberty, they be empowered to recommend an indefinite confinement in some kind of an institution, and why cannot judges be given some discretion as to the kind of institution to which such persons may be sent. Surely we are acquiring sufficient knowledge now of defective and criminal types to enable us to anticipate criminal acts more frequently than we now do. Here, as everywhere else, prevention is worth many times more than cure.



ABNORMAL BRAIN DEVELOPMENT.¹

By H. C. EYMAN, M. D.,

Medical Superintendent, Massillon State Hospital, Massillon, Ohio.

In these degenerate days, when every person who commits a crime, sets up as a defence that he is a degenerate, and transfers the responsibility for his vicious tendencies to his possibly innocent ancestors, it seems to me that a study of the conditions which tend to produce such results might be of interest. It is undoubtedly true that some persons inherit a finer moral nature than others, and if the laws of heredity were closely studied, we would probably also find that some of our brothers have inherited conditions which proved fertile soil for vice, and if environment be not in accord with our highest ideas of morality, how can we expect such to reach a plane where such abstract ideas as truth and justice prevail? We are prone to say they have destroyed their will power by succumbing to vicious practices, and therefore are primarily responsible. Let us see:—The will is simply a process of energizing; a desire or aversion sufficiently strong to produce action after deliberation. Now our youthful offender has a desire to do certain wrongs, his aversion to wickedness, implanted by upright ancestors in most of us, is entirely absent, therefore the will is to commit the wrong and he does so. He is not destroying his will power, merely accentuating the vicious desires which soon become the controlling will. The will to do the wrong then is simply one of the manifestations of abnormality. The brain is developing along abnormal lines, and the mind, dependent upon environmental conditions for its development, is necessarily warped and full of ugly excrescences. The will, having no inhibition from implanted aversion to viciousness, becomes simply the expression of animal desires; but

¹ Read at the Fifty-Seventh Annual Meeting of the American Medico-Psychological Association, Milwaukee, Wis., June 11, 1901.

there is no lack of will power, no diminution of volition. He has become simply a moral imbecile. It is possible that this degenerate offspring of a vile ancestry might be developed along lines of right conduct, and by precept and example be taught aversion to vice and thereby more nearly approach to normal brain development, and this in spite of his heredity. I believe that all mental growth comes from without; that at birth a child has no mind; that he inherits his brain and his potentialities, but that the acquirement of knowledge depends almost wholly upon his environment. Now, when I say that the child inherits potential qualities, I mean that these qualities may dominate him in spite of his environment, but that by proper persistent effort many now classed as moral imbeciles might have been reclaimed if they could have been placed in a proper atmosphere at the beginning of their existence. I have no doubt of the awful heritage of ancestral crime. Dr. E. A. Winship, editor and educator, gives an interesting comparison in a little book called *Jukes-Edwards*, in which the family of Jonathan Edwards is compared with that of the notorious Jukes family. Margaret Jukes went from her home in a retired village to one of the great centers, and entered upon a life of profligacy. In about one hundred and seventy years the family of that wicked ancestress had cost the communities in which they had lived \$1,250,000 as criminals and paupers. Three hundred and ten of the descendants of Margaret Jukes had spent their days in almshouses or similar places; one hundred and fifty were victims of loathsome diseases, or had wrecked their health; sixty were professional thieves, and fifty had gone down to the lowest depths possible for women to go in life. Only twenty of her descendants had ever learned a trade; of these twenty, ten had learned their handicraft in prisons. Now, in Margaret Jukes' case, the desire to do wrong prevailed over her aversion to evil, and hence this awful history; but suppose when this most unfortunate young woman first reached the great city, some kind Christian woman had taken care of her, and taught her to love the good and shun the evil, might not this gruesome history have been averted? Was not this the proper place to correct the abnormal brain development by guiding and directing the progenitress of this most miserable race? In impressive contrast with the degeneracy of the Jukes family, and in

illustration of the power of goodness also to continue and be transmitted, Dr. Winship showed how, in about the same number of years as that through which the Jukes family history was traced, the descendants of one greatly good man, Jonathan Edwards, included men and women who had made and left on their day and generation and on succeeding generations, their mark for Godliness and civilization and nobility of life. This Edwards family had two hundred and eighty-five college graduates to its credit, of whom sixty-five became professors in colleges and thirteen became college presidents, including institutions of such high rank as Princeton and Yale; thus carrying still further the torch lighted in the home and heart of their ancestor. Among the descendants of Jonathan Edwards were also found more than one hundred lawyers and thirty judges.

If a child inherits a trick of motion, a special physiognomy, or a tyrannical appetite, why not the weak cellular structure which predisposes to tuberculosis and to conditions which later may be called manifestations of insanity? Disease in the parent will produce idiocy in the child; arrest of cerebral development. Excess of the passions prevent mental organization; and neglected childhood even produces the equivalent of arrest of development; for, as in the case of the idiot, the arrest of the cerebral development is caused by want of alimentation and therefore malnutrition of the brain, so in the untaught child we get arrest of cerebral development caused by neglecting to furnish properly organized experiences of the right relation of human beings to each other, which gives us a corresponding moral idiot. Men do not become moral by intuition but by patient organization and training. Indeed, the whole process of education consists of the building up of cerebral cells. It has been said that there are four great subdivisions of the nervous system, each one of which presides over, co-ordinates and controls a separate set of functions: 1st, The ganglionic nervous centers, which connect the vital organs with each other and with the brain, bringing them into sympathetic action. 2nd, The spinal cord which presides chiefly over the movements of the limbs and body. 3rd, The photographic storehouses which register the sensations or impressions gathered by the senses. 4th, The gray matter of the cerebrum. Somewhere in this last division are located the

tissues of that which we call mind, and to this are all other portions of the human body subordinate. Here are located the ideational centers that enable us to reason, to think, to will, and probably upon the integrity of this part of the brain depends the moral nature. The tissues of the mind are last to develop, and, according to Maudsley, "instead of mind being a wondrous entity, the independent source of power and self-sufficient cause of causes, an honest observation proves incontestably that it is the most dependent of all natural forces. It is the highest development of force and to its existence all the lower natural forces are indispensibly prerequisite." Thus you see how extremely important that the development of the brain be along normal lines. The mind cannot be the perfect controlling power it should be if some of the essential parts of the physical organization be wanting or abnormal. It has been claimed that the will does not reach the acme of its development until about the thirtieth year, and "is entirely dependent for its outward realization upon that mechanism of automatic action which is gradually organized in the subordinate centers—the cultivation of the senses are necessary antecedents to the due formation and operation of the will." The natural conclusion would therefore be that the moral nature, which simply means the holding of the emotions and passions under the dominion of the will and judgment, is the last developed, and that in the abnormally developing mind, due to hereditary bondage, the moral nature must necessarily be somewhat atrophied. Criminal statistics seem to bear out this idea. Dr. Neison found that the percentage of crime was greatest at about the age of twenty, and that after that time it gradually decreased until at the age of sixty it was only one-fifth as great. It is probably true that from fifteen to twenty the emotions are more active proportionately than at a later age. The desire to commit criminal acts is stronger and the aversion to vice weaker. As yet the judgment is not fully developed, and the youthful offender has not yet learned to count the cost. Experience has not yet taught him that self-denial may later bring its reward. After twenty-five, social questions are more or less involved, and gradually become an efficient factor in regulating conduct, and tend to make the criminal adjust himself to social requirements.

Where the organization of the individual's brain is structurally below the normal, and the development is further handicapped by malnutrition due to vicious environment, the hereditary factor is undoubtedly the determining one, and the offspring of such an individual would surely be a moral imbecile. In this case the development, physical, mental and moral would be limited by heredity. Of course, it may be possible, by absolutely changing the environment, and throwing around him an atmosphere of purity and righteous effort for several generations, and excluding the noxious influence of criminal associates, that eventually the development of the brain may approach more nearly to the normal, but in the individual moral imbecile such development would be impossible. We are apt to lose sight of the fact that the tendency of heredity is to produce and perpetuate an environment in harmony with such abnormal development, and the child having constantly before it the example of vice and debauchery more readily plunges into the vortex of crime. I am aware that certain well-known criminologists aver that environment is the ultimate controlling factor, and that even "hereditary conditions depend upon an environment within limits which necessitate the development of typical characteristics." Grant that this may be true, the condition of the individual must still depend very largely upon his brain development. If, with more favorable environment, a stronger moral growth would obtain, certainly this growth would be preceded by a healthier activity and more nearly normal development of the brain. We inherit a brain, with the potential force for good or evil, but the acquirement of knowledge, coming wholly from without, necessarily depends largely upon our environment. The child that can see acquires knowledge entirely inaccessible to the blind child. So also the child reared in moral surroundings acquires a moral tone wholly inaccessible to the wharf rat. But compare the resultant development of the Jukes with the development of the Edwards. When Jonathan Edwards' children were all young, all except one under twenty and one being only one year old, he was compelled by force of circumstances to take up his abode upon the extreme frontier, at a village where there were only twelve white families and one hundred and fifty Indian families. What now of environment? Here his children had ab-

solutely no advantages of school, and had it not been for the pure blood of saintly ancestors, in all probability they would have succumbed to the dragging chains of their environment, and have grown up in ignorance, if not in vice.

Here are the pictures of these two families—the environment of both being similar, both living on the frontier. The one had a Christian home, in which there was an inherited tendency to industry, frugality, truthfulness and honesty. The other an inherited shiftlessness, dishonesty and criminality. The one inherited abundant capacity and character, every child for generations having been educated from early childhood. The other “had no inherited capacity or training.” Their only chance lay in nursing every germ of hope by the means of industry and education, through the discipline of the shop, the training of the schools, and the inspiration of the church.

Did they take advantage of these? We are told that not one of the twelve hundred secured even a moderate education and only twenty of these ever had a trade, and ten of these learned it in state prison. Why? Was it not because the abnormal brain development which was a part of their heritage made it impossible for them to make the effort? Is it possible that the history of the twelve hundred could have been so uniform, so entirely similar if they had inherited brains and brain development like the descendants of Jonathan Edwards? I believe it possible to bring a bad heritage to decent living if the marriages be with persons of pure blood, uncontaminated with vice or vicious ancestry; but unfortunately these people usually marry in their own sphere, and thus perpetuate and accentuate their vicious tendencies. “It is pre-eminently true that a mighty intellectual and moral force does plow the channel of its thought and character through many generations.”

I presume there are few of us here who could not truthfully say “all that I have, all that I am, I owe to my mother.”

We will not hold that moral perversion is a pathological condition in the sense of disease, but it is surely an abnormal state manifesting symptoms which seem closely allied to the manifestations of real disease. We are not prepared to accept the doctrine that all criminals are degenerates, neither do we believe that all degenerates are criminals, anarchists or lunatics. The author,

the artist, aye, even the eloquent minister of Christ's Gospel sometimes belong to this abnormal class. They are closely related to the anthropological family which furnishes the world its Prendergasts, its Guiteaus and its Marquis De Sades.

Dryden you know tells us,

"Great wit to madness nearly is allied,
And thin partitions do their bounds divide."

While we believe this to be true in some instances, yet we do not wish to be understood as accepting en masse the pessimistic doctrines of Lombroso or Nordeau, who evidently enjoy the thought that the world is degenerating from a high plane, rather than the optimistic though rational view that through evolution we are advancing upwards from a lower plane. An American dude, who when asked concerning his ancestry replied, "Oh I'm the first of me line you know, my father was in trade." It was probably this same individual who asked the elder Dumas if he was not an octoroon—He answered, "Yes" "and your father"? "He was a quadroon," "and your grandfather"? "A mulatto" "and his father"? "A negro." "And may I inquire who his father was"? "He, sir, of course was an ape, my ancestry begins where yours ends." It is the degenerate offspring of oftentimes honest and respected parentage who is the shining star of the theory of race degeneracy;

"Evolution ever climbing after some ideal good,
And Reversion ever dragging Evolution in the mud."

We believe that the history of the world is one long positive verification of the doctrine of evolution, the fundamental principle of which is the survival of the fittest. The weak have been ever pushed to the wall, and only the strong, the healthy, the brave have successfully battled with encroaching multitudes and permanently placed their banners high upon the bulwarks of the nations of this earth. We are frequently brought face to face with statistics which prove that insanity, hysteria, criminality and moral imbecility are on the increase, out of proportion to the increase in population. Accepting this as true, still we claim that in the universal application of the law, the results would still be the same. All conditions tending to degeneracy tend to sterility. I once had under my care at the same time, the grand-

mother, the mother and the grandson—members of the same family, and all afflicted with the manifestations of insanity. The grandmother had been a woman of ordinary mental capacity, the mother less stable and with an early tendency to hysteria, the grandson an intellectual and moral imbecile, whose generative organs were undeveloped and who was entirely incapable of procreation. The last of a degenerating family. The apparent increase of the abnormal and defective classes in the United States may be partially accounted for by the constant pouring into this country of these classes. You will recollect that early in the settlement of this country our Puritan fathers were plagued with a class of people who had been arrested for various offenses in the mother country, and upon trial were found "not guilty if they left at once for New England."

Abnormal brain development is abhorrent to the physiologist. The relations, however, existing between criminology and psychology is very intimate. So well has this fact been established that the proper study of the criminal classes has been conceded to the alienist. Crime itself exhibits such peculiar and unreasonable conditions that the study of the criminal at once becomes of great interest to the psychologist. In Belgium, the Government recognizing this obligation to the criminal classes, has appointed commissioners, alienists of known ability to examine all criminals confined in the public jails. Every day our newspapers teem with accounts of strange and unnatural crimes, many of them motiveless, and consequently unaccountable, except on the grounds of abnormal brain development or moral perversion. Now, if our moral pervert is but the legitimate outcome of a degenerating race, we should probably not treat him as a criminal or ordinary felon. There is a class of philosophers who believe that all crime is the result of abnormal or imperfect development, but who also believe that as the laws are made to protect the innocent from the effects of crime and not to protect the criminal, that all crime, whether committed by mentally unsound or by the merely abnormal, should require the punishment of the perpetrator. On the other hand we are taught by equally intelligent sociologists that defective and abnormal conditions absolve the perpetrator of crime from legal responsibility. We are satisfied that mental unsoundness in the criminal class is

generally a mark of physical and mental degeneracy, and that hereditary influences, with this class, are especially strong.

Natural, spiritual and civil laws all entail penalties for those who break them, and of these, natural law is the most remorseless. Given a drunken grandfather, a weakened and diseased father—we have almost certainly a defective criminal or insane grandson.

We do not pretend to say that one can inherit insanity, but we do say that the vulnerable cell structure is directly inherited from weakened cell structure, whether caused by disease or dissipation. Degenerate or defective man, from whatever cause his deficiencies arise, has less discernment, greater temptations and less will power to resist them, and consequently more often falls into the commission of crime, and in consequence is deprived of his liberty. These are the people who overcrowd our police courts, and are frequent boarders at the work houses. Would it not be better both for the community and the criminal himself, if he were placed in custody, and his degenerate condition operate as a bar to his release, than to have him committed to the work house for a thirty day period ten times a year? I do not believe that the perpetrators of any crime should go scot free, and as the average convict in many ways either physically, morally or mentally falls below the normal standard, I believe that the best interests of the community demand his incarceration and detention until his disposition to criminal acts be overcome or eradicated. Therefore if a brain be abnormally developed we may look for absence of sympathy or interest in the world or humanity, lack of knowledge and judgment, inattention, criminal tendencies, feebleness of aversion to crime, atrophy of the notion of duty and morality, all the direct result of environment either hereditary or physical. We have attempted to portray some differential details between normal and abnormal brain development, and we realize that the more complete the normal mental growth, the nearer we come to Him who gives us power to grow, develop and perfect our mentalities.

EXAMINATION OF THE STOMACH CONTENTS IN THE INSANE.¹

By FLORENCE E. ALLEN, M. D.,

*Assistant Physician and Pathologist at the Michigan Asylum for the Insane,
Kalamazoo, Michigan.*

Since the introduction of laboratory methods into asylums for the care of insane, the secretions and excretions of insane patients have been subjected to various chemical and physical tests. In the beginning the majority of cases were examined for scientific purposes to determine, if possible, whether any cause could be found in the blood, urine or glandular secretions to account for the mental alienation. While the microscope thus far has failed to reveal the ultimate cause of insanity, all of these investigations have been of use clinically and of decided benefit to the patients themselves. Nowadays routine examinations of the urine, blood and sputum are made in asylum laboratories and it is in advocacy of such regular examination of the gastric content and condition that the following few cases are cited. At the Michigan Asylum, examination of the stomach content in sixty cases, has been made within the past year, to aid in diagnosis. This number of cases has not been sufficient to warrant definite or absolute statements or conclusions and this paper is largely a report of progress. A considerable part of the earlier work was done in conjunction with Dr. D. Murray Cowie, of the Department of Medicine of the University of Michigan, and a report of it may be found in the transactions of the Michigan State Medical Society for 1900. In nearly all the cases examined, Ewald's test breakfast consisting of 50 grams of white bread without crust and a glass of water was the only one given. As a rule, the passage of the stomach tube was attended with no

¹Read at the Fifty-Seventh Annual Meeting of the American Medico-Psychological Association, Milwaukee, Wis., June 11, 1901.

difficulties and where much objection was raised the nasal tube was employed. Tests were made in some instances to ascertain the absorptive and motor power of the stomach and a diagnosis was seldom made upon one examination only.

Scarcely a patient is brought to the asylum without some evidence of gastro-intestinal disturbance, such as coated tongue, foul breath, constipation or anorexia. Sometimes the symptoms disappear under a few days' eliminative treatment and attention to diet. Sometimes they do not, and remain as more or less fixed evidences that the digestive system is at fault somewhere. Symptoms, however, while they point out the presence of disease cannot serve as guides to the true condition of the stomach. There are pathological conditions of the gastric mucosa quite opposite in nature which produce the same symptoms, or at least those which are so similar that they cannot be relied upon as a basis for diagnosis. For example, the condition of the stomach glands in which is secreted an increased and abnormal amount of hydrochloric acid may give rise to loss of appetite, constipation, coated tongue, loss in weight and peculiar subjective sensations in the epigastrium, all of which are found as symptoms in inflammation of the stomach where no hydrochloric whatever is secreted.

Unfortunately we are often unable to obtain trustworthy statements from insane patients and thus cannot rely upon deriving aid from knowledge of subjective symptoms. A patient may be mentally incapable of expressing how he feels, or the condition present may produce no subjective symptoms other than a vague feeling of discomfort. The writer believes that upon these vague feelings are founded many of the somatic delusions so common among the insane, such as snakes inside of them, that their stomachs are distended and fill the entire abdomen, that their bowels are obstructed, that there are fires within them constantly burning and numerous others.

A careful clinical analysis of stomach contents will often reveal that a patient's refusal of food is based upon an actual organic derangement and not upon delusions as may be thought. That stomach disorders may exist in insane patients without giving rise to any suspicion of their presence has been found by actual examination to be true. Out of a dozen of our cases examined

at the Michigan Asylum and taken haphazard without regard to mental trouble, physical health or clinical history, only four were found to have normally acting digestive agents; three out of the twelve had an excessive acid secretion, five were defective in the amount of free hydrochloric acid secreted, and two had not the slightest trace of this acid nor of pepsin. Examination of a second dozen cases yielded practically the same results. Occasionally a slight decline in weight which is persistent in spite of attention to diet may be the only symptom discoverable.

The following cases selected from those examined at the asylum show that serious gastric lesions easily may be overlooked and they also illustrate the value of treatment applied to a definitely determined condition.

Case No. 30. O. A. O. woman, aged 50. Admitted to the asylum May, 1900, with a history of insanity in the family. The patient had been insane in a greater or less degree for a number of years; was a hard worker, addicted to the use of liquor and in fact had taken raw alcohol at times. Upon admission she was much emaciated, weighing but eighty-eight pounds. Her mental condition was that of agitated melancholia and her delusions were those of fear, suspicion and impending harm. She was restless, untidy in her habits and refused food as a rule. In spite of careful attention and treatment she gained but two pounds in weight in five months, although there was a slight degree of mental improvement. Six months after admission an analysis was made of the stomach contents. Ewald's test breakfast was given and an attempt made to withdraw it at the expiration of one hour. There was such a large quantity of mucus present that it caused a blocking of the tube and very little of the stomach contents could be expressed. Chemical examination showed that there was no free hydrochloric acid and no proteid or milk curdling ferments present, and therefore the stomach was devoid of any digestive or germicidal power. There were no organic acids nor any condition that would lead to the suspicion of malignancy, and the condition was diagnosed as chronic mucous gastritis. Several examinations made at different times confirmed the diagnosis. She was given dilute hydrochloric acid, 15 drops, and pepsin powder, 30 grains fifteen minutes after meals and occasional stomach lavage. Improve-

ment was almost immediate and was noticed first in her increased appetite. She now began to feed herself and to eat greedily. In one month she gained four pounds, in another two more and now weighs 104 pounds, a gain of fourteen pounds since treatment was instituted, six months ago. She has steadily improved in her mental condition, is tidy about her person, goes daily to the laundry for several hours work, has recovered from her agitation and is an entirely different woman. It is true that she is not mentally restored, nor is it likely she will ever be, but she is far more comfortable physically, is a useful member of the institution and the progress of dementia apparently is stayed.

Case No. 32 D. G. Z. Woman aged 43. Admitted to the Michigan Asylum for the Insane, January 6, 1899. Patient has several insane relatives, is herself a degenerate, has been considered insane a dozen years and is now demented. Following admission she was disposed to sit by herself or hide under beds unless closely watched, and kept her eyes tightly closed. She scarcely ever talked, was on one or two occasions violent towards the nurses, always had to be fed and was very untidy about her eating allowing the food to fall from her mouth on the front of her gown. There were no active symptoms at any time of stomach disorder with the exception of refusal of food which was thought to be due to her mental condition. She stated one day to a relative visiting her that her stomach caused her considerable pain, so a test breakfast was administered, and the stomach contents examined with the following result verified by many subsequent examinations. No free hydrochloric acid whatever was found, but a small amount existed combined with salts, no pepsinogen or chymosinogen and a large amount of mucus was present. After the withdrawal of the tube she told her physician that she had pain in her stomach a short time after taking food and thought it must be due to a snake. She was given dilute hydrochloric acid, in 15 drop doses, and 30 grains of pepsin powder 15 minutes after meals, and almost immediately her condition improved. Her appetite was regained, she fed herself in a tidy manner and in a few weeks she was able to go to the general dining-room for her meals. Her gain in weight in six months amounted to 16 pounds. No great change is to be hoped for in her mental condition, but she is neat in her

habits, is never violent, does not attempt to hide away from others and answers questions intelligently.

The following case is interesting because of the marked physical and mental improvement shown, the latter, unfortunately, not remaining permanently.

Case No. 18: E. G. Woman, aged twenty-seven. Admitted April, 1899, history of insanity in the family. Her mental distress dates back about seven years and is considered to be that of primary dementia. Clinical notes made during her residence in the institution state that soon after admission her general health failed, appetite became poor, she had occasional nausea and vomiting, foul breath and constipation. However, she improved sufficiently to be removed by a relative, but was brought back within the same year in very poor health, pale, emaciated and weighing but ninety-two pounds. She was untidy, destructive, noisy and violent at times. Her stomach content was examined a short time after her return, after method before detailed, with the result of demonstrating free hydrochloric absent, small amount of combined hydrochloric, no proteid digesting ferment or milk curdling agent present, and a large quantity of mucus. Her improvement under exhibition of hydrochloric acid and pepsin was little short of marvellous. There was a gain of eighteen pounds in six months with a corresponding gain in health and color. The most pleasing result was her mental improvement. She became tidy in habits, did not have to be fed, had an excellent appetite, would render effective assistance on the ward, talk intelligently and hardly would have been known for the same woman. Of late she has retrograded somewhat and is relapsing into her former untidy habits, but her physical health still remains excellent.

F. S. Man, aged 50. Admitted January, 1901, no history of insanity in family elicited. Patient is markedly hypochondriacal, imagines bowels and stomach are out of order, that the latter is distended and that his food is retained in his body. He is depressed and takes a pessimistic view of his own recovery. He has no appetite and is badly constipated, but there are no other objective symptoms on the part of the digestive system. The usual test breakfast was given him and withdrawn at the end of an hour. Only a few shreds of food were obtained.

Thinking that the tube might be occluded, it was withdrawn, found to be clear and inserted again with no better result. Next day another breakfast was given and upon washing out the stomach an hour later nothing but a few small particles of food were obtained. On a subsequent day a third attempt was made and the tube was introduced three-quarters of an hour after the test breakfast but only a small quantity of stomach contents could be expressed. On another day Riegel's test breakfast consisting of a vegetable soup, finely chopped beef, a slice of bread with a glass of water was given. Normally considerable food should be found in the stomach four hours after the ingestion of such a meal. In this case three hours afterwards both the tube and stomach lavage failed to bring up anything but a few fibres of meat. This indicated an increased motor power of the muscular wall of the stomach and pointed to a case of hyperkinesis or too rapid expulsion of food from the stomach. An accompanying increase of acid secretion was found to be present. Ewald describes hyperkinesis as a neurosis of the stomach and recommends as treatment the building up of the system, rest cure, fresh air, change of surroundings, etc. This case has been under observation too short a time to draw any deductions as to the result of treatment, but it is interesting as showing that a large and apparently healthy man may have an unsuspected disease of the stomach which in all probability is the cause of persistent constipation and must certainly be an influencing factor in producing somatic delusions. The foregoing cases are but a few of the many examined at the Michigan Asylum during the past year. While treatment in no case has effected a cure of the mental condition, it has hastened the convalescence of acute cases, and allayed many of the disagreeable features of the chronic ones and checked in many, the progress of dementia. Above all it has shown that a considerable number of insane suffer from diseases of the stomach which it lies within our power to remedy.

NOTES ON THE WILLS OF LUNATICS, WITH SPECIAL REFERENCE TO THE LAW OF MARYLAND.

By WILLIAM H. BUCKLER.

(Being a Paper read at the Sheppard and Enoch Pratt Hospital.)

The relation of lunacy to wills is in some respects less complicated than its relation to contracts.

In dealing with the latter subject,¹ we found that when our courts seek to determine the validity of a lunatic's contract, they do not consider only the condition of his mind, but endeavor also to protect the interests of the party who has acted in good faith upon the supposition that the contract was valid. In the case of wills, however, the problem is simplified.

A will has only one maker. If that maker was, at the time of making, a lunatic or an idiot, he had, of course, no power to form or express a rational desire. Consequently his testamentary desires, which we call his will, must be null and void, and therefore the validity of a will must depend solely upon the question whether or not the mind of its maker, at the moment when he made it, was in that normal condition legally known as "sound and disposing."

Every testator thinks, of course, that he possesses that requisite. In former times it was therefore usual, and it is even now not very uncommon, for the draughtsman of a will to begin the document with a solemn declaration by the testator that he is "of sound and disposing mind and memory."

The reason for the use of this phrase is, that it has long since been laid down by judges and text-writers as denoting the proper criterion of testamentary capacity. Yet the time-honored language in which this test has been formulated is not only vague but misleading. For, as we shall see, a man may make a valid will, even though, in the words of Mr. Justice Washington, "his

¹ See this Journal for April, 1901.

memory may be very imperfect." (Stevens vs. Van Cleve, 4 Wash. C. C. 267.)

What is then the true legal test of capacity in relation to wills? Everybody knows that a man totally idiotic or insane cannot make a will, except in a lucid interval. But if the man's lunacy is slight or doubtful, it becomes important to know what degree of intelligence or sanity the law requires to support his will.

In discussing the contractual capacity of lunatics, we saw that the mind of the contracting party need not be sound in all respects, but only in respect to the particular transaction. Similarly, in regard to testamentary capacity, we may say with Mr. Justice Washington that the question to be asked as to the mind of the testator is this: "Were his mind and memory sufficiently sound to enable him to know and to understand the business in which he was engaged at the time when he executed his will?" It does not, however, by any means follow that testamentary capacity is identical with contractual capacity. Mr. Justice Redfield, a great authority on wills, has stated that he usually told a jury "that less mind was requisite to make a will than a contract of sale, understandingly, for the reason that in contracts of sale there are usually two parties and some degree of antagonism between their interests and efforts;" whereas "under the common circumstances of making a will one is left free to act upon his own perceptions merely." (Converse case, 21 Vt. 168).

And, to quote again Mr. Justice Washington, a man "may not have sufficient strength of memory and vigor of intelligence to make and to digest all parts of a contract, and yet be competent to direct the distribution of his property by will." Conversely, a case may be easily imagined in which a man's mind might, owing to some insane delusion or aversion, be unfit to make a valid will, and yet might be perfectly rational and well-balanced where a question of business or the making of a contract was concerned. Thus, Sir James Hannen, the great English probate judge, has differed with Justice Washington and Judge Redfield, and has said: "The highest degree of mental soundness is required in order to constitute capacity to make a testamentary disposition. From the character of the act, it requires the consideration of a larger variety of circumstances than is required in other acts, for it involves reflection upon the claims of the

several persons who may be supposed to have claims on the testator's bounty, and the power of determining in what proportions the property shall be divided amongst the claimants." These divergent passages simply show that the inquiries as to contractual capacity and as to testamentary capacity must proceed on different lines.

The statute law of this State (Code P. G. L., Art. 93, Sec. 309), has emphatically declared that no will shall be valid unless the person making it is at the time "of sound and disposing mind, and capable of executing a valid deed or contract." This legal test gives no trouble in practice, and has survived on our statute book since 1798. But the essential difference between a will and a deed or contract is so plain that such a test has been found unsatisfactory, and has in this State been done away with by a process of judicial construction.²

In Maryland, as elsewhere, it may, of course, be shown that the mind of a testator, whose will is attacked, was such as to enable him to make during his lifetime one or more valid agreements. That fact, if proved, manifestly tends to establish the testator's capacity. But the proof of that fact alone does not, even here, conclusively establish the validity of the man's will. The true test in Maryland, notwithstanding the statute, is almost the same as that laid down by Mr. Justice Washington in 1820 (*Harrison vs. Rowan*, 3 Wash. C. C. 585), and which was cited with approval by Lord Cockburn fifty years later. According to this test, the testator must have "an understanding (1) of the nature of the business in which he is engaged, (2) of the property he means to dispose of, (3) of the persons who are the objects of his bounty, and (4) of the manner in which it is to be distributed between them." If we add to the above requirements the fact that the testator must understand (5) the nature and merit of the claims of persons who are or might naturally be

²In 1835 the power to execute a valid deed or contract was laid down as the test by which a testator's capacity should be measured; *Davis vs. Calvert*, 5 G. & J. 300. But in 1875 the requisites of testamentary capacity were described *without mention* of deeds or of contract; *McElwee vs. Ferguson*, 43 Md. 484. And in 1879 the "meaning of the words" of the statute was similarly defined; *Brown vs. Ward*, 53 Md. 395. See also *Frush vs. Green*, 86 Md. 515.

the objects of his bounty, we shall have a complete definition of the present criterion of testamentary capacity in Maryland (*Brown vs. Ward*, 53 Md. 382), and of that which is best supported by authorities elsewhere, and may be regarded as the general rule. (See *Clevenger, Med. Jur. of Insan.*, I, page 288, and cases cited in note.)

It is obvious that a testator may comply with all of the above requirements and yet be genuinely insane either immediately before or after the execution of his will. This is best illustrated by the remarkable case of *Cartwright vs. Cartwright*, decided in England in 1793.*

The testatrix, a Mrs. Cartwright, a lady of very large fortune, was afflicted with violent mental disorder both before and after the making of her will. She was cared for at home by nurses, and they were generally forced to put a straight waistcoat upon her and to keep her hands tied, as she was often violent, and would try to thrust her fingers into their eyes. One day, in consequence of her earnest entreaties, and with the doctor's permission, they untied her hands and gave her pen, ink and paper. At her request they also left her alone, and watched her from an adjoining room. At first she wrote upon several pieces of paper, tore them and threw them in the grate. Then, after walking up and down the room many times in a wild and disordered manner, she wrote the will in question, being occupied about two hours in doing so. The will was an absolutely sensible performance, was written without a single blot or mistake, and was entirely consistent with the attachments and habits of the testatrix when in a sane condition.

Notwithstanding the marks of derangement which she showed at the time, the nurses permitted her to have a candle, with which she affixed her seal to the paper, and she endorsed upon it the words, "This is my will," followed by her signature. The only surviving nurse who had witnessed the writing of the paper, as above described, stated that Mrs. Cartwright had at that time shown no symptoms whatever of recovery from her disorder, and that she did not then appear to have sufficient capacity to comprehend or recollect the state of her family or affairs. Yet Sir William Wynne sustained the validity of this paper, which

* 1 Phill. 90.

he pronounced to be "as rational a will as she, or any other person, could have made." He held that the best proof of a lucid interval was the performance of "a rational act rationally done," and he inferred from the remarkable sanity shown upon the face of the document that the testatrix, at the time when she wrote it, must have known and understood what she was about.

This extraordinary case does not, of course, establish the principle that a lunatic's will is always valid, provided its terms are wise or sensible. I cite the case merely as illustrating the point that testamentary capacity is not determined by any external standard or condition, such as the commitment of the testator to an asylum, or his treatment for mental disease before or after the date of execution of his will, but that capacity depends upon his possessing, at the time of execution, a mind and memory capable of grasping (1) the transaction, (2) his property, (3) his family connections, (4) their claims upon him, and (5) the method of distribution which he directs. Whether or not a testator had such capacity is a question usually decided by a jury.

Bearing in mind the above definition, let us now see what particular forms of mental weakness have or have not been held to invalidate a will:

1. *Old Age*.—This does not of itself destroy testamentary capacity, nor does it do so even when accompanied by a moderate degree of progressive senile decay. In a West Virginia case (*Kerr vs. Lunsford*, 31 W. Va. 686), where the will of a testator, 78 years old, was sustained by the jury below, and was afterwards held valid on appeal, the court said: "It will not do to say, because an old man is suffering from senile dementia from August, 1880, until August, 1882, at which time he was incompetent, that therefore twenty months before the latter date, on the 27th day of April, 1881, he was as a legal consequence incompetent to make a will, even though the disease may be incurable and there are no lucid intervals. It would be sad, indeed, if all old men suffering from the disease of senile dementia were because of this fact to have their wills set aside."

Similarly, in the Vermont case of *Converse vs. Converse* (21 Vt. 168), where the testator was 78 years old at the time his will was made, and it was shown that he had been afflicted with an

incurable and progressive disease of the brain, which caused him to lose all reason some months before he died, Judge Redfield declined on appeal to interfere with the verdict of the jury sustaining the will.

One of the most striking cases on this point is the Maryland case of *Jennings vs. Prendergast* (10 Md. 346), where the will of a testatrix 96 years old was upheld by our Court of Appeals. The will disinherited the only son of the testatrix and the families of two of her daughters. The court considered that fact, coupled with her great age, to be a circumstance arousing suspicion, and a reason for scrutinizing the other facts connected with the making of the will. But, as strong evidence had been given in favor of the soundness of mind of the testatrix, and the Orphans' Court had sustained the will, the Court of Appeals declined to interfere.

In short, there is no limit of age beyond which a testator loses his capacity. Everything depends upon his mental condition; his age is at most merely a reason for examining carefully the conditions under which he acted.

2. *Loss or Failure of Memory*.—This does not necessarily disqualify one for making a will, notwithstanding the solemn phrase "sound memory and understanding," to which I have referred.

Judge Redfield in 1849 declared that a testator must be able to collect and to retain in his mind, *without prompting*, the particulars of the business to be transacted; but the weight of authority does not require even so moderate a degree of memory as those words would imply. Prompting the memory of a testator is nowhere forbidden, and has doubtless often been practised without invalidating the will of the person prompted. Where the loss of memory is merely such as is naturally incidental to old age, it has been held (*Eddy's case*, 32 N. J. Eq. 701) that the will is valid, and we may say that nothing short of total loss of memory constitutes a cause of disqualification. The rule is well stated, as follows, in an Illinois case (*Yoe vs. McCord*, 74 Ill. 33; *Story's case*, 20 Ill. Ap. 195): "If the testator was of sound mind, but of poor or impaired memory, he was of sound mind and memory as the phrase is known in law. The failure of memory is not sufficient to create the incapacity, unless it be total or extend to the testator's immediate family or property.

Sound memory is something quite different from good or unimpaired memory." This rule has been approved in another more recent Illinois case, where the will was held valid, even though the loss of memory was combined with considerable eccentricity and a belief in spiritualism.

3. *Eccentricity*.—This is, of course, very different from unsoundness of mind, and, as Sir James Hannen has stated, it would be "highly dangerous to encourage the notion that, because a person is eccentric in his habits of life, he is therefore incompetent to make a will." Like old age or partial loss of memory, the eccentricity of a testator may be considered along with other circumstances as tending to prove his incompetence. But in itself it is no disqualification. As Sir James Hannen puts it, "Eccentricities must not be allowed to weigh heavily in the scale against the argument that a man is of sound mind. They may help to confirm the idea derived from other sources that there was unsoundness in his mind; they may, so to speak, fill up the crevices of the argument, but they do not themselves constitute sound material on which a conclusion can be built as to the deceased's capacity." (*Boughton vs. Knight*, L. R., 3 P. & D. 79.) A good illustration of this principle was the case of *Morgan vs. Boys* (Taylor, Med. Jur., 2nd ed., II, p. 555), in which the testator, after bequeathing all his property to a stranger, and disinheriting his next of kin, directed his executors to cause some parts of his bowels to be converted into fiddle strings, others sublimated into smelling salts, and that the remainder of his body should be vitrified into lenses for optical purposes. In a letter attached to the will he stated that he had a mortal aversion to funeral pomp, and wished his body to be converted into purposes useful to mankind. He was considered by his friends to be a man of undoubted shrewdness and judgment, and the court held that his eccentric beliefs and wishes were in no way calculated to interfere with his testamentary capacity.

4. *Peculiar Speculative Beliefs*.—Opinions on questions of mere speculative belief are not considered evidences of insanity and do not therefore *per se* avoid the will of the person holding them. The classic case on this point is that of *Bonard's will* (16 Abb. Pr. N. S. 185), decided in one of the lower courts of New York in 1872, and never taken to the Court of Appeals. Its

celebrity is doubtless chiefly due to the eminence of the counsel and of the medical experts engaged on either side.

Louis Bonard, a Frenchman, of somewhat eccentric habits, but very shrewd and industrious in business, left all his estate, which was quite large, to the American Society for the Prevention of Cruelty to Animals. He had no children or descendants. His will was contested by his French next of kin. It was conceded that he had held with great tenacity to the doctrines of metempsychosis, *i. e.*, that the souls of men after death pass into animals, and that this belief accounted for his choice of a legatee. The judge held that opinions as to a future state, concerning which no man has positive knowledge, and in regard to which mankind have differed even in the most civilized countries, could not be deemed evidence of insanity, and as it was not shown that the testator was of unsound mind except upon the subject of the transmigration of souls, his will must be held valid.

So also, it has been held that religious apprehensions, producing extreme anxiety and hopeless despair, because of the testator's conviction that he had passed his day of grace, which rendered him indifferent and listless as to all other subjects, did not prove him incapable of making a valid will, where his attention could be diverted to other things, and where as to them he was rational and sensible.

Similarly, a belief in spiritualism has in this State (*Brown vs. Ward*, 55 Md. 389) and elsewhere been held to be no evidence of testamentary incapacity, where it does not appear that the will was a direct offspring of such belief. But, on the other hand, the late Judge Gresham, in Indiana, set aside the will of a testatrix who was proved to have embraced spiritualism as practiced by a particular medium, and became possessed by it and suffered it to dominate her life, and where it appeared that the belief was artfully used by the medium to alienate her from her only child and get all her property. (*Thompson vs. Hawks*, 14 Fed. Rep. 902.) Such a case as this simply belongs to that class in which invalidity results from undue influence.

5. *Partial Insanity*.—By this is meant, not some intermediate stage in the progress of mental disorder, but a disturbance of the mind at some particular point, not involving it at any other point. It means, according to Sir John Nicholl (*Dew vs. Clark*, 3

Addams 79), that a man may be insane on one or more subjects and sane on all others. Dr. Hammond defines it as being a perversion of the understanding in regard to a single object or a limited series of objects. (1 Wharton & Stille, 3rd. ed., Sec. 60, note.)

It would be safe to say that at least nine-tenths of the cases of contested wills, in which the insanity of the testator is alleged, are cases of partial insanity. Indeed, the same statement would hold good as to cases involving contract or crime, for the simple reason that where idiocy or general insanity exists, the case is usually so plain that the aid of the law courts is not invoked.

Lord Cranworth stated the difficulty very clearly, as follows: (Boyse vs. Rossborough, 6 H. L. cases, p. 45): "The question is always one of degree. There is no difficulty in the case of a raving madman or a drivelling idiot in saying that he is not a person capable of disposing of property; but between such an extreme case and that of a man of perfectly sound and vigorous understanding there is every shade of intellect, every degree of mental capacity. There is no possibility of mistaking midnight for noon, but at what precise moment twilight becomes darkness is hard to determine."

Since the question is therefore one which must be solved in each particular case according to circumstances, it becomes important to ascertain what effect upon a testator's capacity the proof of his partial insanity will have.

One branch of the subject has long been settled, both in this State and elsewhere. When there is proof that a will was the direct consequence of a delusion under which the testator labored, a delusion calculated to pervert his judgment respecting the disposition of his estate, it is clear that he cannot be considered to possess testamentary capacity, although upon other subjects he may have been rational and sane. In other words, the direct product of an insane delusion is not a valid will, even though the testator at the time of making it was sane in other respects. This is the doctrine of the text-books and cases ever since Shelford on Lunacy and Dew vs. Clark; it is simply the teaching of common sense.

But, upon the question whether the converse of this proposition holds good there has been much doubt and controversy.

Can we say that the will of a man, sane on other subjects, which does not appear to have been the product of his insane delusion, is a valid will? In other words, is there a kind of insanity which is innocuous from a testamentary standpoint, and which does not necessarily avoid the will of its victim?

The views of lawyers upon this question have varied considerably in the course of the past century. But before the history of the legal doctrine is approached, the difference between the medical and legal theories may be stated in the language of the Supreme Court of Georgia (*Gardner vs. Lamback*, 47 Ga., p. 192): "Modern writers upon the subject of insanity as a disease include within their definition of the term many persons whom the law would punish as criminals, if they violated the law, and whom the law would declare competent to make a will. The medical writers treat the subject as healers. The law inquires into it with a view of seeing how far society can afford to make insanity an excuse for crime, and at what point it is best for the general good to say that a man shall not be allowed to make a will. However old, feeble, weak-minded, capricious a man may be, if he be able to have a decided and rational desire as to the disposition of his property, he is not wanting in testamentary capacity." The modern rule as to partial insanity is then stated by the court as follows: "A man may say and do things which a medical man would take as an evidence of insanity, and yet it may be that he is nevertheless able to have a decided rational desire as to the disposition of his property."

In this Georgia case the court declined to set aside the verdict of the jury sustaining a will, by which a testator worth about \$50,000 had cut off two of his daughters with five dollars a piece and left everything to his wife and son. His delusion was that he was a pauper, and had no means of procuring food for himself or his family, which would certainly seem to have been an insane delusion. The lower court had correctly charged the jury that, if the testator was a monomaniac, it must appear, in order to support the will, that the will was not in any way the result of, or connected with his monomania. The jury were evidently unable to see any connection between the delusion and the peculiar provisions of the will. They therefore pronounced the testator competent, and the instructions to the jury having been correct,

the verdict was, as above stated, sustained by the Appellate Court.

In a recent Pennsylvania case, where a very strange will had been set aside in the lower court, the Supreme Court of Pennsylvania (*Taylor vs. Trich*, 165 Pa. 604) ordered a new trial to determine the following questions: "Was the testator the victim of a delusion? Did this delusion affect his position towards his children? Was his will, by which his children were disinherited and his property given to two institutions, the result of this delusion?"

This testator was proved to have held singular views as to faith and his relations to God. He became much interested in two institutions where faith cures were performed, one in Boston, and one at Bristol, in England. He failed to make converts among his family, and stated that he felt called upon by the Lord to reject them entirely, if they persisted in refusing to obey the teachings of faith. When he made his will, he did not mention his children, but after providing a life estate for his wife, gave his entire property to the two institutions named. He regarded himself as being in business for the Lord, rather than for himself, and had said that he was directed by the Lord to give his money to those institutions. But his general sanity was not denied, and he entertained opinions such as many sane men hold. The question to be determined, as the court puts it, was this: "Did these beliefs unsettle his judgment, and leave him under the influence of a delusion that controlled his will?" If they did, the will must be held void, but if not, the will would be valid.

These two cases illustrate the present legal view of partial insanity. Such insanity does not make void a will, unless the provisions of the will are directly connected with it, or attributable to it. The court usually instructs the jury substantially to that effect, and it is the jury's business to consider the facts, and to determine by their verdict the difficult question above stated. (*Brown vs. Ward*, 53 Md. 393).

This legal result has, however, not been reached without some controversy, and the history of the above rule will now be briefly stated.

The existence of "partial insanity" and its difference from

total or general insanity, was recognized and explained by Sir M. Hale in the seventeenth century. In the old English cases bearing upon the subject, which are not numerous, no general rule was laid down, but each case was decided on its merits upon rough principles of common sense. A good instance of this class is the famous case of *Dew vs. Clark* (3 Addams 79) in which a will directly produced by the insane aversion of a father for his daughter was held to be invalid. Such a will, however, proceeding unquestionably from an insane delusion, would have been held invalid even under the modern rule. At last, in 1848, by his celebrated judgment in the case of *Waring vs. Waring* (6 Moore P. C. cases 349), Lord Brougham defined the legal effect of partial insanity, or monomania, in a manner intended to reflect the results of advancing medical knowledge. The facts in this case showed plainly enough that the will of the testatrix, ought to be declared void on the ground of general mental unsoundness. She was not only extremely penurious, irritable and eccentric, but she imagined that her husband was trying to poison her, that she was an object of persecution, that various persons, among others Lord Melbourne and Lord John Russell, were following her about in disguise, and that certain ladies made faces at her in church. On most subjects, however, she was perfectly businesslike and sensible. Late in life she made the acquaintance of Thomas Waring, a stranger to her family, and left a great part of her property to him. Lord Brougham held the will void, as any other judge would probably have done; but he proceeded further to lay down the rule that partial insanity was an erroneous term, and that any insane delusion, even though latent, and even though unconnected with testamentary disposition, ought to avoid a will, upon the ground that it was a symptom of mental unsoundness. "The mind," said Lord Brougham, "is one and indivisible. We cannot, therefore, in any correctness of language, speak of general or partial insanity. We can never rely on the act, however rational, done by the person called partially insane, because we have no security that the lurking delusion, the real unsoundness, does not mingle itself with or occasion the act."

Although, as we shall presently see, this doctrine of Brougham's has since been judicially repudiated, both in England and

in this country, it must, I think, be admitted that it seems more in accordance with sound medical teaching than the rule which now prevails. Wharton and Stille, in their Medical Jurisprudence (3d. Ed., I., sec. 52 fol.) criticize Lord Brougham's ruling chiefly upon the ground that it goes too far. If any the least degree of delusion or irrational behavior in the testator is to be regarded as destroying his capacity, then, say these text-writers, we must hold that such men as Dr. Samuel Johnson or Abraham Lincoln, or Lord Castlereagh, who are admitted to have possessed powerful and healthy intellects, must have been incompetent as testators, which is an absurdity. This criticism, however, is somewhat unfair, because it assumes Lord Brougham to have gone further than he did go. He did not have in mind such passing delusions or hallucinations as those with which Dr. Johnson and Lincoln are said to have been afflicted, but he evidently contemplated only such permanent delusions, whether latent or apparent, as would indicate mental disease. This is shown by the illustration that he gives of an imaginary case in which the testator is a prey to the fixed idea that he is Emperor of Germany. This idea is supposed to coexist, as might well be the case, with rationality, shrewdness, memory and business capacity on all other subjects. Such a fixed idea seems far removed from all questions of testamentary disposition; and yet it is obviously impossible to say to what extent such a delusion, though disconnected with questions of family or property, might not influence that man in making his will. Again Lord Brougham uses the following language: "If the being or essence, which we term the mind, is unsound upon one subject, provided that unsoundness is *at all times existing* upon that subject, it is quite erroneous to suppose such a mind really sound on other subjects." He thus excludes such cases as the voice of Dr. Johnson or the hallucinations of Abraham Lincoln.

Now Dr. Maudsley (Responsibility in Mental Disease), in criticising the doctrine of the cases by which Lord Brougham's judgment in *Waring vs. Waring* has been overruled, uses nearly the same argument, and points out, what Lord Brougham seems to have felt, the enormous difficulty of determining whether a given case of insane delusion or monomania was or was not such as to influence the will of the sufferer. "Deranged feel-

ings," he says, "may be the offspring of mental disease without being connected with the delusion, they and it being concomitant effects of a common cause. It is very possible that a will might carry no evidence of the bearing of a delusion upon its provisions, and yet might witness to feelings which would have had no existence but for the disease."

I have ventured this digression respecting Lord Brougham's famous judgment because it may serve to bring out more plainly the present rule of law by which that judgment has been superseded. A few years later, in the case of *Smith vs. Tebbitt* (L. R., 1 P. & D. 398), Lord Penzance followed Lord Brougham and laid down that "a person affected by monomania, although sensible and prudent on subjects other than those upon which his insanity is commonly displayed, is not in law capable of making a will." The facts in this case were, that a lady of the name of Thwaytes had bequeathed to a stranger, a Dr. Smith, the bulk of her large fortune of £500,000. She believed herself to be the third Person of the Trinity, and Dr. Smith to be God the Father. She regarded her husband as the devil. It was shown that she had furnished her drawing room at a cost of £15,000 for the purpose of being used "at the Day of Judgment." So extreme a case as this would doubtless, like the *Waring* case, have been held to show testamentary incapacity under any system of law. A judge holding the theory of a distinction between total and partial insanity would certainly have held Mrs. Thwaytes to be in a state of total insanity, and therefore incompetent as a testatrix or indeed for any other purpose. But the fact remains that Lord Penzance, in delivering judgment, went out of his way to reaffirm Lord Brougham's view.

In 1866, the Supreme Court of New Hampshire, had before it a case (*Boardman vs. Woodman*, 47 N. H. 120), in which certain mild delusions were proved in the testatrix, and the court adopted these as the practical test of her partial mental unsoundness. Delusion is not, from a medical point of view, a conclusive test of the existence of mental disease, yet, as this court truly remarked, "delusion is essential to the *legal* idea of mania, for it is difficult to conceive how insanity could be judicially established, unless delusions of some sort were proved." The New Hampshire Court then proceeded to reject the doctrine of War-

ing vs. Waring by laying down that, "If the will of the testatrix was not in any way the offspring of her delusion, and not influenced by it, she is sane for the purpose of making a will." The jury found that the will was not connected with the delusions of the testatrix, and consequently upheld it. This New Hampshire case constitutes, I think, the earliest departure from the doctrine of *Waring vs. Waring*.

Four years after this, the Court of Queen's Bench rendered their famous decision in the case of *Banks vs. Goodfellow* (L. R., 5 Q. B. 549), the judgment being delivered by Lord Chief Justice Cockburn. A striking feature of this judgment is the extensive use that he makes of American authorities. The testator in that case had suffered from delusions of an insane character. The ordinary meaning of an insane delusion in its legal sense is a belief in things impossible, or a belief in things possible, but so improbable under the surrounding circumstances, that no person of sound mind would give them credence (*Brown vs. Ward*, 53 Md. 378). And the delusion of the testator John Banks was certainly of this kind. He felt convinced that he was pursued and molested by devils or evil spirits whom he believed to be visibly present. He had also a violent aversion to a man named Alexander, and notwithstanding the man's death, believed that this person still pursued him. He had been confined in an asylum 20 years previously, and just before making the will had had a succession of epileptic fits. On the other hand, he had usually been capable of managing his affairs, and the will left all his small property to a niece, the child of his only sister, who had lived with him, so that its provisions were perfectly natural. The jury found that, except for the delusions above referred to, the state of his mental faculties was such as to enable him to make a will, and that these delusions had not, nor were calculated to have, any influence on him in the disposal of his property. Thus the court had before it the question "whether a delusion, thus wholly innocuous in its results as regards the disposition of the will, was to be held to have the effect of destroying the capacity to make one."

After rejecting as fanciful and beyond our knowledge Lord Brougham's view of the mind as one and indivisible, and pointing out that the faculties and functions of the mind are various

and distinct, Lord Cockburn lays it down, as one of the teachings of mental pathology, that, while the mind may be overpowered by delusions, which utterly demoralize it and unfit it for the perception of the true nature of surrounding things, there are, on the other hand, delusions, which, though the offspring of mental disease and so far constituting insanity, yet leave the individual in all other respects rational and capable of fulfilling the duties and obligations incidental to the various relations of life. He asks whether such partial unsoundness of the mind, if it leaves the affections, the moral sense, and the general power of the understanding unaffected, and is wholly unconnected with the testamentary disposition, should have the effect of taking away testamentary capacity. Stated in this form, the question would admit of but one answer. It being assumed that the affections, morals, &c., were not affected, even though mental disease might exist, there was no reason for denying to the testator the exercise of his ordinary testamentary rights, and consequently the will of John Banks was held valid.

The above decision has had an immense authority, and the rule may now be said to be universal, or nearly so, that the theory of medical science that there is no such thing as partial insanity, and that a man is either sane or insane, is not true in law. (See *Blakely's case*, 48 Wis. 294).

The rule thus established in *Banks vs. Goodfellow* is, however, admitted to be far from perfect. Mr. Taylor concedes (*Medical Jurisprudence*, Sec. 656) that injustice "may possibly be done by the rigorous adoption of this principle, since delusion may certainly enter into a man's act, and it may not be always in our power to discover it." And Dr. Clevenger (*Med. Jur. of Insan.*, I, page 233), states that Lord Brougham's heretical views on monomania are, from the medical standpoint, "essentially right." There seems therefore to be no presumption in criticising the doctrine of *Banks vs. Goodfellow*, great though its authority may be. It should also be noticed, that Lord Cockburn based his view of the existence of delusions which do not affect testamentary capacity upon "the pathology of mental disease and the experience of insanity in its various forms," in other words upon the authority of medical experts. And yet, in assuming throughout his judgment that the will of John Banks was not affected by his

delusions, Lord Cockburn was relying upon the verdict of the jury, *i. e.* a body of non-experts.

We may certainly question the soundness of Lord Cockburn's medical theory, and may doubt if there be any single form of mental disease which *all* doctors would concede to be absolutely incapable of affecting the power of testamentary disposition. But even granting that there is a certain class of innocuous delusions recognized by medical experts, we may well ask if it is right that, when we wish to know in a particular case whether the delusions of a testator do or do not belong to this class, we should commit the solution of the problem to a committee of twelve laymen. If, as Lord Cockburn asserts, medical authorities have agreed in pronouncing certain forms of mental disease to be innocuous so far as testamentary capacity is concerned, then surely, in order to ascertain whether a given delusion or set of delusions is harmless, we ought to summon a committee of experts and have the question determined by medical authority. How the difficulty will be met cannot, of course, be foreseen, but it seems safe to predict that the last word on this vexed subject of partial insanity has not yet been spoken.

The present rule is clear: If in the opinion of a jury, the will of a testator suffering at the time from insane delusions, was not produced or influenced by those delusions, that will is valid. If otherwise, it is invalid. The jury, to whom we now entrust the solution of this difficult question, is in practice largely guided in such cases by the contents of the will itself, so that no great injustice is apt to result, whatever be the theory as to partial insanity upon which the judge instructs them. If the will recognizes the claims of the testator's family or kindred it is usually held valid, whereas if a man with insane delusions, even apparently unconnected with testamentary disposition, should make a grossly unjust will, that will, as everybody knows, is very apt to be set aside. Yet the cases which I have mentioned above are sufficient to show that juries will sometimes sustain wills containing provisions of apparent injustice, so that the importance of a sound legal theory on the subject is manifest.

It is noticeable that the courts, in their treatment of lunatics' wills, as in the treatment of lunatics' contracts, have been guided not so much by abstract theories of mental unsoundness and

its logical results as by views of public policy. "Is it", they ask, "for the greatest good of the greatest number that a particular sort of lunatic shall be recognized as having testamentary capacity?" "Yes," they say, "it is, provided a jury will certify that his delusions did not overpower him."

In their doctrine as to lucid intervals they show the same breadth of view. When insanity is once established, the presumption is that it is continuous, unless the disease be of a temporary nature, when, of course, that presumption does not exist. But in most cases of serious mental disease involving incapacity the burden of proving a lucid interval, with the accompanying restoration of mental capacity, is on the party alleging it. Now, to prove a lucid interval does not mean proving that the mind is entirely restored to its original vigor. It is enough to prove that the mind has recovered sufficient intelligence to grasp the several kinds of knowledge contained in our original definition. As we saw in the extreme case of Mrs. Cartwright, a lucid interval may sometimes be inferred from the mere competence of a testator to draw his will in a rational manner.

This question of lucid interval *vel non* like that of innocuous insanity *vel non*, is passed upon by an ordinary jury. So that here again we have a pure question of psychiatry decided by a group of non-experts. After all, the province of the jury in such cases is perhaps no more strange than the power which the law vests in a jury of deciding whether a man shall, as a lunatic, or shall not, be deprived of his freedom; and it would therefore seem that no change can well be made in one part of our system of lunacy practice, without making at the same time radical changes in other parts.

The legal rules as to testamentary capacity may be thus summarized: A person of unsound mind may make a will as valid as that of any other person, unless in the opinion of a jury his power of rational action is destroyed by general mental disease, or by some partial mental disorder affecting the performance of that particular act.

A word more must be said as to the effect of undue influence, a point not covered by the above summary. The question of the existence of this influence is also a proper one for the jury. While undue influence may be practised upon any testator, it is,

of course, most often alleged and proved in cases where the mind of the testator is weakened by age or disease. It is quite distinct from testamentary incapacity, and in fact presupposes the possession of capacity by the testator alleged to have been influenced, yet the two issues are so often found united that some authorities regard a partial incapacity as a prerequisite to the existence of undue influence.

As compared to the undue influence which would avoid a contract, testamentary undue influence has this peculiarity: it must be much stronger than the former kind, and must be something which compels the testator to do that which is against his will from fear, desire of peace, or some feeling which he is unable to resist. It must in fact amount to coercion, and may not consist of prejudices or animosities, but must be traceable to some outside pressure. Suggestions or advice, earnest entreaty, persuasion, the influence arising from affection, may all be employed upon the testator for the purpose of guiding his will, and yet not amount to undue influence. The degree of pressure allowable in each case will depend largely on the relations of the parties and largely, of course, on the strength of the testator's mind. It is at this point only that the question of undue influence bears upon that of lunacy. Each case depends entirely upon its own particular circumstances (*Frush vs. Green*, 86 Md. 516). If proved to the satisfaction of the jury, undue influence produces of course the same effect as complete lunacy, and renders void the will of its object.

PSYCHIC TREATMENT.¹

By EDWARD C. RUNGE, M. D.,

Superintendent St. Louis Insane Asylum, St. Louis, Mo.

The spirit of the age is upon us: inductive biologic science has sounded the death-knell to speculative dogmatism. The unrest that makes itself felt within the confines of our special work, augurs well for the future. The hunger for actual insight into matters psychiatric, once aroused, can not be appeased by hazy deductions of arm-chair philosophy. The practical mind does not look for sudden glimpses into morbid psychic life: advances are to be expected only along the path of patient research into the recesses of all sciences correlated to psychiatry. I have plainly expressed myself on previous occasions regarding our hopes and limitations,—I will but repeat that fruitful work in the line of disclosing the mysteries of true causes underlying psychic disease must be done by highly specialized talent in connection with the hospitals or still better with neuro-psycho-pathic sanatoria. That somatic treatment of many psychic cases will undergo profound modification upon the discovery of true causes, is self-evident. Should micro-chemical investigation succeed in proving the process underlying dementia paralytica to be one of a specific toxæmia, serum-therapy may offer us means to stay the ravages of this fateful malady. Other specifics will possibly be found, that may help us to combat the pathologic processes which to-day we can only meet with efforts directed toward the improvement of general and special nutrition. Greater knowledge in psycho-physics and experimental psychology may eventually disclose some successful methods by which we shall be enabled to efface the defects following in the wake of acute psychoses much in the same way as evolutionary devel-

¹ Read at the Fifty-Seventh Annual Meeting of the American Medico-Psychological Association, Milwaukee, Wis., June 11, 1901.

opment takes place in normal child-life. No matter how great our progress along the lines indicated may be, it is certainly too much to hope that specific therapeusis will invariably check any inroads upon the molecular composition of the psychic substance at the very onset of psychic disease. To palliate the effects of the morbid process as manifested by a psycho-asthenia of a variable degree in one or the other of the component parts of the psychic ego, or to save the latter from further deterioration,—psychic treatment must always play an important rôle in the therapeutic management of the psychically afflicted. For this reason, if for no other, an occasional review of the details of this treatment would appear highly desirable: my present effort is intended not only to bring out a full discussion of this vital topic, but, if possible, to pave the way to a more exhaustive symposium on the same at one of the future meetings of our Association,—a symposium which will offer a résumé of the rich experiences gathered daily by the members of the Association in a field treated with inexcusable brevity in the best textbooks on Psychiatry.

I am fully aware of the fact that much of what I will say in the following pages, must bear the stamp of the common-place and the self-evident. This consideration does not deter me in the least: I am simply following the example set to us by our colleagues in other specialties, who do not hesitate to fill the pages of current literature, week after week with reports of their personal experiences in well-trodden pathologic fields. Let us but mention appendicitis in its medical and surgical aspects. Another rather serious objection to dealing extensively with the subject in question, arises from the unavoidable obtrusion of the personal equation. Where one self acts on another self,—both selves come in for their consideration. In psychic measures the chief weight must be placed not so much on what is done but on how it is done. Our task will be greatly lightened at some future day when the importance of scientific classification shall find more general recognition, i. e., when epileptics, imbeciles, paralytics and senile demented, shall be removed to special abodes. I may add to that list the victims of an acute alcoholic psychosis; to these, separate institutions should open their doors to-day as was strongly and justly urged at the International Anti-alcoholic Congress, recently in session in Vienna.

As I intend to discuss psychic treatment under now prevailing conditions, my remarks apply to one and all of the members of our official families, representing every conceivable type of psychic abnormal life. There is even no necessity for drawing a hard and fast line of demarkation between the treatment of convalescents from a psychosis and their less fortunate fellow-sufferers: in the former, psychic measures are applied with a view of hastening the *restitutio ad integrum* while in the latter they serve the purpose of staving off further loss. It can not be gainsaid that our so-called chronic insane who constitute the bulk of the population in our hospitals, are grossly sinned against, in this direction. I took occasion to express myself on this particular point at a recent meeting of the Missouri Conference of Charities and Correction in the following manner: "For just and sufficient reasons may we state then axiomatically, that without peripheral stimulation neither normal growth of the psychic portion of the brain nor the restoration of its impaired function can be expected. With all due allowance for the achievements of the past in the direction of humane and rational treatment of the insane, we must honestly admit that the means at our disposal for carrying on this most essential part of our work are as yet utterly inadequate which is particularly true with regard to the permanent denizens of our institutions. . . .

Redemption from existing conditions may be hoped for, only by increased financial expenditures which will give into our hands sufficient means to combat the destruction of the psychic self of the human beings intrusted into our care. I do not decry the importance of supplying the digestive organs with the necessary amount of substantial, life-sustaining food; but the brain, this proudest possession of man, is surely entitled to some consideration. It is sad enough to witness the gradual decline of all higher human faculties in such diseases as do not lend themselves to control by medical skill; how much worse is it in cases in which, by the adoption of proper and timely measures the impending catastrophe may be averted. Some may think and say that more money will not be forthcoming; that the commonwealths are now groaning under the heavy burden imposed upon them. That may be true enough, but I, for one, do not relish the idea of being particeps criminis in the

wholesale assassination of human intellects without registering an emphatic protest and placing the responsibility for the criminal neglect where it properly belongs. This arraignment is devoid of all local coloring. It is intended to draw into its meshes all commonwealths, barring none."

The foregoing remarks point clearly to the obstacles we encounter in our attempts at psychic treatment. Let us consider now what can be done within our limitations. The educational value of a more or less prolonged sojourn in a well-regulated institution is a matter of common observation. The atmosphere permeating such an institution, is pregnant with elements of a suggestive nature, that appeal unconsciously to the deeply rooted imitativeness of human nature. In some cases this is the only factor essential to the upbuilding of that part of psychic inhibition which is to a great extent a product of education, commonly called self-control, and which enters so largely into the make-up of two factors determining our ethical attitude toward our environment,—namely self-respect and respect for others. During the convalescence from an acute psychosis very little else is required to produce desired results. The instability of the will so noticeable for a time in such cases, may call for more or less frequent, kindly but earnest admonitions, and in some select cases a forced course of treatment will prove most successful. I have in mind two patients,—one, a young man who was with us from February to December, 1895, the other, a young girl who was our guest from December, 1898, to February, 1899, and then again, upon self-sought admission, from January to May, 1901. Both patients were the offspring of families of high social standing, of good education, and both with the history of hereditary taint on the paternal side. They presented both the picture of the maniac-depressive type of psychic disease. At the first appearance of positive signs of convalescence, I removed both patients as often as practicable from their hospital surroundings, and placed them in such as they were accustomed to before their affliction. The young man was invited to associate with my assistants and myself, in walks, games and at meals; soon he was persuaded to add his mite to the pleasure of others by giving a series of clever recitations and character-sketches, and then he was intrusted with the keeping of some office-books.

The young woman was brought under the influence of our own home-life, and into direct association with my wife. Both patients freely admitted that they grew conscious of the first unmistakable signs of a return to their normal selves from the time of the change in association and surroundings.

Such a mild course will not always prove sufficient. In some cases—those belonging mainly to the chronic class, particularly alcoholics—a more rigid discipline must be resorted to before favorable results are obtained. The only disciplinary measures at our disposal are the temporary withdrawal of certain privileges, forced absence for a few days from walks about the grounds and entertainments, and, last not least, the transfer from pleasant to less congenial surroundings. For this reason, if for no other, it is good policy to fit out the convalescent wards as pleasantly as possible so as to render the contrast with other parts of the hospital the more striking. The effect of such a transfer is often magic, even in cases characterized by contemptuous aloofness as in those of an unmitigated paranoia. A middle-aged woman, a splendid representative of the querulant paranoiac, contracted the habit of reviling the food in such a disgusting manner as to cause great distress to her table companions while clearing her own plates of every vestige of food. Repeated admonitions and warnings remained unheeded, and kindness met with characteristic defiance. Six hours spent on the infirmary ward, with its admixture of colored population, transformed this unruly patient for the remaining fifteen months of her stay in our midst into one of the most docile and pleasant creatures we could boast of. I removed her from her uncongenial environment just before bed time, for I was convinced that, after having spent a night there and finding herself alive and unharmed in the morning, my argument would have lost the best part of its force.

A chronic alcoholic, with keen auditory hallucinations of an intensely sexual nature, recently and repeatedly made the air of one of the convalescent wards lurid with vilest profanity. A short visit to the disturbed ward must have presented to him, being as he is extremely hard of hearing, a perfect pandemonium of vision. I personally conducted him back to his former abode after having witnessed the profound psychic impression of the

change. Ever since he has been suave and pleasant and is apparently what he always was before his affliction—a gentleman. It is generally understood in our hospital that profanity is under no conditions tolerated in any other ward than the one for disturbed patients. A big, raw-boned laborer, Irish by birth and alcoholic by habit, confessed to me at the time of our parting handshake, that he had never thought to be able to pass through six months without uttering a single oath until he landed on our premises.

The experienced psychiatrist will at times be faced with instances of clear aggression on the part of the patient, in which careful investigation will prove that the momentary loss of self-control was not the product of abnormal cerebration, but would have occurred under similar conditions in individuals endowed with normal psychic inhibition. As an illustration, a fellow of inherently brutal nature, intensified by a long life of dissipation, indulges in a favorite pastime by knocking down a much older, rather feeble man without the slightest cause or provocation on the part of the latter. This act of inexcusable brutality is witnessed by a young man of usually quiet, unaggressive nature, who springs up and, exclaiming, "Why don't you pick a fellow of your own size, you coward?" strikes the aggressor a straight blow in the eye, blackening this organ to a marked degree. When I appeared upon the scene the punished individual looked very much aggrieved and evidently expected that some rigid disciplinary measure would fall to the lot of the champion of his victim. Having elicited the facts, I called the individual with the discolored orb aside, and expressed—evidently to his utter amazement—my heartfelt sorrow that his other eye had not shared the fate of its fellow. On entering the room of the second assailant, who appeared downcast and almost repentant, I held out my hand to him with the words, "Charlie, you know that I do not like fights about here, but had I been in your place I should have done the same." The bully and the subduer have never had a black mark recorded against them since.

The very admission that we take on occasions recourse to disciplinary measures, proves conclusively that we hold our patients to a strict account for some of their actions, in other words, that we exact from them a degree of responsibility while

they are living with us. At the same time many of us are inclined to deny to the psychically afflicted all responsibility for any act committed by them *extra muros*. How this seeming paradox appeals to some of our own charges I learned on one occasion to my discomfiture. After having relished the tuneful melodies of an operetta in a neighboring summer garden, a dozen men patients, attended by myself and in company with my wife, discussed over our coffee and cigars various questions pertaining to our daily life. The question as to how I viewed the responsibility of the insane for their acts, was put to me squarely, and the answer, though cautiously worded and hedged about, was in the main, that I did not hold them responsible. Like a flash came from the lips of one of our friends: "Of course, the Doctor says we are not responsible; but how about the fourth hall." By the fourth hall was meant the disturbed ward which served as a temporary retiring place for those who would not yield to less suggestive measures. I helped myself over my momentary embarrassment by joining in the general hearty laugh at my expense. I did not care to explain to our companions of that pleasant summer eve that life outside their present home and associations made far higher demands upon the self-control of the individual than that within the walls of such institutions as ours. Most of us have on our records cases of what may be fitly called hospital-recoveries, in which the grossest psychic flaws disappeared and psychic inhibition had sufficiently been restored to allow of their dove-tailing in our little world, while the ways and temptations of the external world brought out the dormant deficiencies with fateful certainty. A middle-aged man, artist, well-educated, much traveled, alcoholic, spent in 1897 and '98 six months, and in 1899 and 1900 twelve months with us. He was released on January 12, 1900, not having manifested any morbid symptoms for some time. On January 26, 1900, he came rushing into the institution panting for breath and all in a tremble. He had just escaped from the clutches of an almost irresistible obsession, impelling him to thrust a child seated in front of him through the window of a rapidly moving electric car. A supreme psychic effort succeeded in stifling the impulse; he threw himself off the car and sought refuge at our institution. Old associates, with the usual con-

comitant of alcoholic indulgence, was the sum total of his experience during his two weeks of absence, added to this possibly the inevitable discouragement of facing a precarious existence. At present, under the benign influences of institution life, he is free to come and go, and in plain view of several public drinking places. He is in charge of the green-houses and flower beds; is permitted to make trips to his mother and to an occasional concert unattended.

As a contrast picture to the preceding, I will relate the case of a young man who has thus far stubbornly refused to yield to our efforts in the direction of awakening within him some degree of self-control. He was admitted on August 13, 1897; was then 28 years old, single, driver by occupation, of common school education and rather mediocre intellect. His father is an alcoholic, and the patient has been guilty of frequent alcoholic excesses which, for some time before his commitment, were accompanied by attacks of frenzy closely resembling those of psychic alcoholic epilepsy. Shortly before the patient's advent to the hospital his mother was found dead with a deep gash across her throat. When apprehended the patient gave a good account of himself, and succeeded in throwing suspicion on his demented sister, who was eventually indicted for the murder, but ordered confined to this institution on September 10, 1897. She presented a picture of non-aggressive terminal dementia and symptoms of incipient pulmonary tuberculosis; she died of the latter on January 7, 1901. Her brother's psychosis has taken the shape of alcoholismus chronicus with keen auditory hallucinations and nothing particularly striking in its course and manifestations, except for an almost demoniacal thirst for human blood, being, I am happy to say, the only representative of a truly sanguinary phase in psychic disease within my personal experience. He has confessed to me to have killed his mother, and, when left unguarded, he has repeatedly attempted to cut other patients' throats with some crude self-constructed instruments which have escaped the vigilance of the attendant. When allowed to take meals in the dining room he would try to brain one of his fellow-patients with a chair. These assaults have not as yet been accompanied by fatal results, but for fear that some permanent injury might follow one of the attacks, I saw myself

compelled to abandon all mildly persuasive measures, and to resort to mechanical restraint in combination with isolation, as it was not possible to have two attendants mount guard over this patient. I may add that the assaults are made with an evident thirst for the sight of blood, and are not the result of an epileptic state with its suspension or blurring of consciousness. In this case I had to accept defeat, and all I may hope for in the future is the gradual supervention of a saving dementia.

Fortunately such extreme cases are very rare—the great majority of our patients are open to suggestion when offered at the proper time and in proper manner. Since writing this I have learned of an instance in which an oft-repeated kindly suggestion marked the turning point from disease to convalescence. A gentleman, about 64 years old, widower, with a business career behind him, having been at the same time a student all his life, was admitted to our hospital about eight months ago. His wife had died a few years before and her loss had left a profoundly depressing impression upon his psychic self. In such a frame of mind he fell in with some adherents of spiritualism, and plunged head over heels into its mysteries. He grew so absorbed in its teachings that he neglected his wage-earning pursuit and faced a condition just short of actual privation. Insomnia supervened and cerebral nutrition was finally so seriously impaired as to produce a state of brain exhaustion. The mediumistic manifestations became a matter of constant personal experience, i. e., our patient suffered with auditory hallucinations of a more or less imperative nature. At the time of his admission his case was aggravated by an attack of diphtheria of some severity, which left him with a rather extensive diphtheritic paralysis and a high degree of emaciation. Under proper somatic care the patient improved slowly, and with the disappearance of the vagus paralysis he found himself in fairly good physical condition. My first assistant, Dr. Thierry, and myself set at once to work in a joint attack upon the stronghold of our patient's delusional life. Doubts in the reality of the latter arose and its morbid nature began to dawn upon him. On the day preceding his departure, a week ago, he stated candidly that his convalescence dated back from a conversation he held with Dr. Thierry, in the course of which the latter enlarged upon the theme of human

will and pointed out to him that his salvation rested entirely on the proper exercise of his own will-power. In my efforts to influence our patients psychically I do not disdain to call for assistance on some of them. The deeply rooted fear and suspicion of hospitals for the psychically afflicted, still so prevalent among the laity, frequently appear exaggerated in the victim of psychic disease at the time of their first admission. To dispel these superstitious notions no one is better qualified than a comrade in a state of real or apparent convalescence. This must be considered a counterpart of a folie-à-deux. I derived for example, a great deal of genuine pleasure from watching a woman afflicted with hysteria allaying the uneasiness of another patient suffering with an (honestly acquired) lues cerebri manifesting psychically by profound depression and amnesic aphasia; she undertook the self-imposed task the more cheerfully as she had learned by repeated experience that her own existence was only bearable within the sphere of unbroken suggestive therapeutics. In the male wing of the hospital we may see daily a paralytic dement, at present in a state of complete psychic remission, ministering faithfully to the troubled mind of a newcomer afflicted with the same disease in its incipiency. This interesting play is enacted on quite a number of occasions, mostly upon my own instigation; it acts as a splendid psychic stimulant on the ministering patient, and paves the way for myself in my attempts to gain the confidence of a recent comer who often looks askance at the keeper of his liberty.

To affect the emotional, ethical and intellectual portions of our patient's psychic selves we have three powerful agencies at our disposal, namely, religious services, entertainment and occupation. Considering the peculiar nature of the psychic material around us, the religious services, to be helpful, must be of a certain character, which can only be determined from a therapeutic point of view. In our own city we draw on a population in which Catholicism is strongly represented, hence we count among our denizens from 42 to 45 per cent of adherents to that denomination. For the benefit of these a mass is celebrated every Sunday morning. As the Catholic services do not appeal forcibly to the emotion, I have never seen the necessity for any interference except on one occasion, which involved the

confessional. A young Irishman had married a divorced woman, professing Methodism a year previous to his admission, evidently while he was already in the incipient stage of his malady. He presented the typical picture of an agitated melancholia characterized by intense mental anguish, food refusal, and profound religious agitation. After a few months of treatment he improved markedly and regained his pristine cheerfulness. He still persisted in viewing his marriage ties as a sore transgression of the teachings of his church, which was clearly within the limits of his normal perception. On one Saturday evening our young friend had relapsed into his morbid state of agitation, and upon investigation I found that he had been to confession on that very afternoon. I learned from the priest who ministers to the sick, that a young priest, recently ordained, had been intrusted on this occasion with the confessional service, and that he had undoubtedly lost sight of the nature of his flock. The father confessor was changed upon my request, and everything has been smooth sailing since. Not being able to compensate, financially, a Protestant minister for his services, I experienced for a time great difficulties in satisfying the spiritual needs of our non-Catholic population. As the situation began to look rather hopeless, I was finally persuaded to give trial to a small band of untrained missionary workers who were repeatedly impressed with the fact that our services should be utterly devoid of all sensational and depressing elements; that they must breathe hope and peace to the poor sufferers whose heavy burden should palliate any of their spiritual shortcomings. Promises were readily given, only to be broken, as on one Sunday morning the exhortations of the leader resounded through the entire building, thus bringing our relations to an abrupt termination. I eventually succeeded in getting what I considered would answer the purpose, and at present we have very satisfactory services in English and German. Living up to my idea of personal supervision of our patients' psychic well-being, I never allow a clergyman or a priest to visit them indiscriminately until I am certain of their having fully grasped the situation in our institution. For similar reasons literature of a religious character is never distributed except under medical direction.

The second psychic agency I mentioned was entertainment,

using the word in its broadest sense. To this category belongs a long list of measures, some of which subserve the purpose of simple recreation with its accompanying quality of mental diversion, while others are aimed at an additional stimulation of the higher psychic faculties. Among the former rank foremost the regular weekly entertainments. To fulfil their remedial purpose they must be conducted in a highly stimulating fashion, so as to make every one present feel that he is an integral part in the proceedings. There is nothing so wearisome as the so-called "dance," in which a comparatively small number of patients actively participate while the rest are looking on without a spark of interest. In order to accomplish this we must enter, heart and soul, into the spirit of the entertainments and not intrust their management to employees. The patients highly appreciate the show of active interest on our part in their contributions to the festivities, and feel more kindly toward their keeper who appears before them as their entertainer. I have found it a source of constant pleasure to move about the throng bringing out the musical or other talent; and in order to reach the entire crowd I frequently call on the assembly to sit in judgment upon contestants for honor or small prizes in cake walks, solo dances, recitations, etc. These entertainments have at times been useful to me in a clinical sense; in some suspected but still obscure cases of dementia paralytica I was able to ascertain the first signs of muscular incoordination in the dancing steps of a patient, or in the handling of bow and strings of a violin by another. For several years the attendants have not appeared on the dancing floor except to fill vacancies; square and round dances find two patients for partners, this having helped to increase their sense of independence. As an important feature of the weekly entertainments, figures a chorus composed mainly of women who undergo twice a week a drill under the leadership of a regularly employed vocal teacher. These drills have not only markedly improved the singing, but have proved themselves to be highly enjoyable events. In an essay written for me by one of our convalescent patients on the subject of psychic stimulation from the point of view of an inmate, appears the following passage: "The soothing and enlivening influence of music should not be neglected, for all such various and agreeable impressions

of the outer world through the avenues of the senses upon the enfeebled brain are as necessary to its development as sunlight is to the growth of a plant." The writer did not overrate the importance of music as a stimulating agency. I regard music, appealing as it does through the emotion to the mind without the conscious effort on the part of the listener, as one of the most efficacious psychic drugs. Like all drugs, it should be of unimpeachable quality, which unfortunately it never is, for the average hospital band excels in the production of more or less rhythmic noises, but hardly of real music. I am longing for the possession of a good string quartet, the musical combination best suited for our purpose, as string instruments, with their wealth of overtones, are most apt to strike responsive chords in the psychically afflicted. For similar reasons do I prefer of the registers of the human voice, the mezzo and the baritone. Our instrumental performers are encouraged to read music, as playing from memory is too much of a mechanical process not requiring any mental effort. We had a woman patient in a state of a far progressed secondary dementia, who could not utter two logical sentences consecutively and lived almost oblivious of the past and present; she was still able to perform on the piano in an apparently intelligent manner, and to sing some ballads with her own accompaniment, while all comprehension of printed music had been completely submerged by her general amnesia.

The regular entertainments are interspersed with occasional shows and picnics on the grounds or in the open-air pavilion. A close analysis of the psychic effects produced by this class of entertainments entitles them to the label of amusements, pure and simple. A girl afflicted with profound neurasthenia tinged with hypochondriasis, who usually presents a picture of hopeless somatic and psychic invalidism, surprised herself by oft-repeated outbursts of hearty laughter on several days succeeding the presentation of a comic opera by our local talent. As further well-known antidotes to morbid introspection are to be regarded in-door and out-door games. Billiards, dominoes, chess, checkers, and last, not least, card games, tend not only to relieve the monotony of institution life, but act also as psycho-therapeutic agents. In select cases card parties in our own rooms have given additional charms to the games as such. Among out-

door sports I give preference to the ones that offer opportunities to mild rivalry and to which outsiders can be challenged, for such games are relished as much by spectators as by the participants. On many an occasion have I been handed a correct score of a base-ball game by patients who give usually very slight evidence of spontaneous cerebration. Even many of our women patients enjoy watching a game in progress and frequently join in the vociferous applause by our home "rooters."

In taking several hundred patients on trolley rides over town with stoppages at public parks, or to matinées in summer gardens, in taking smaller crowds to theatres, expositions and concerts, we add to the amusement feature another essential factor which helps to stimulate the patients' perceptive faculties and to foster their interest in the external world, not forgetting the incalculable educational value of such incidents on the community at large. It was interesting and at the same time almost pathetic to observe the effect of the first trip to town on a patient, now 50 years old, admitted in 1876, who until 1895, i. e. for nearly a score of years, had never been allowed outside the walls of the institution or the palisade surrounding the then extant airing courts. He was subjected to special precautionary measures, because tradition given down by word-of-mouth to the present day, accused him of having killed his man in his early days, which does not appear on the meagre records of that period. As I do not recognize the appellation "criminal" among our patients I placed him at once on the footing befitting his psychic condition. The sluggish brain was whipped up to higher activity, and since repeated experiments of a similar nature have effected a second birth of the man's psychic self. He has gladly accepted invitations to parties given to fifteen or twenty patients in our parlors, and has appeared to take an interest in discussions on a variety of topics. These parties were not rarely of great instructive value to myself. Without their assistance I possibly would not have discovered the profound mysticism which one of our friends, an intelligent Scotchman, had imbibed while in H. M.'s service in the land of the Hindoos. I tore him rudely from this realm of esoteric day-dreaming, and steered his intellectual efforts into the channels of elementary human physiology. He successfully reached terra firma, was released as "not in-

sane," but possibly recovered from an attack of theosophismus chronicus, and has since entered the Marine Hospital service as nurse. Our women were treated to such home gatherings under the guidance of my wife, and it need hardly be added that the "Kaffeklatsches" in the superintendent's quarters were things long to be remembered. Only recently I took six convalescents and one patient in the incipient state of paranoia to the opera; while my wife and myself had seats in the parquet, our friends were permitted to enjoy the performance in the balcony without the ubiquitous attendant. At the after-theatre lunch they unanimously voted that the fact of having been trusted without attendance, was more deeply appreciated by them than all the other features of that pleasant evening. Another way of keeping aglow within our patients the feeling of kinship with their more fortunate fellows whose ranks they hope to re-enter at some future day may be found in the arrangement of special festivities, marking occasions of special significance. At a flag raising a military post is invited to conduct impressive ceremonies that bring home to our people the fact that in their confinement they are still the children of their great mother country. Independence, Thanksgiving and Decoration Days are given similar significance and sometimes graced by a clever address by one of our local orators. Dewey Day reminds them of events in contemporaneous history, and cheer after cheer rends the air when the lines indited by the great admiral in response to my invitation are read. The advent of the new century was not allowed to pass without due importance being given to the event. It was positively inspiring to watch the impression made by my remarks bringing out the contrast pictures representing the treatment of the psychically afflicted a hundred years ago and to-day. The shudder running through the assemblage when I conjured up the well-known scene in which Pinel, in the stone-paved halls of the Bicetre, is seen to cast off the iron chains and manacles from the unfortunates huddled closely together like so many beasts of prey, found its happy compensation in the thought that those days of brutal superstition and superstitious brutality are forever gone.

A further means to stimulate the interest in human events is to be sought in the literature of the day, to which I should like

to subscribe liberally—the daily newspaper is, in my opinion, one of the most valuable psychic agencies—not that more serious reading should be discouraged. Hundreds of books condemned by the public library and magazines are placed on the ward shelves, as I have learned that the demand of a book from the regular institution library proves too great an effort to patients lacking spontaneity. Many of our friends appreciate deeply their exceptional social position, living, as they do, in highly artificial surroundings. To relieve this condition to some extent we encourage as far as practicable the intercourse between them and their kin. If the latter live at a distance, correspondence is the means of keeping up the family ties. Patients residing in the city are permitted to make occasional visits to their homes attended or not attended as the case may be. Frequent calls of relatives or friends to patients are invited whenever the latter's psychic condition is favorable. The picture presented by many hundreds of patients and visitors, of whom a large number are children, intimately interspersed over the lawns, offers great attraction to the observer. The inspiring effect produced by visits of patients after their release on the minds of the less fortunate ones is not to be underrated. I have never discouraged these visits, but, on the contrary, have always tried to impress the minds of these welcome visitors with the spirit of unbounded hospitality permeating their former home.

Much more could be said on this important subject of entertainment, but I believe that I have succeeded in the preceding to give a fairly complete outline of measures falling under this chapter of psychic treatment.

It remains now for me to subject to a cursory analysis the third chapter, which professedly offers the greatest difficulties, namely, the chapter on the occupation of the psychically afflicted. Ruskin has said somewhere, "When a man is *rightly* occupied, his amusement grows out of his work." If we substitute psychic stimulation for the word "amusement" we could not state more succinctly and more fittingly what the right kind of occupation will do for our patients. To achieve therapeutic results they must be *rightly* occupied, in other words, an element of actual interest must be infused into their occupation. Here I will cite the case of a patient in whom this vexed problem has found a

spontaneous solution; if this case stood for the type of many others our task, to occupy our patients rightly, would be wonderfully simplified. This patient, a blacksmith and all around mechanic by occupation, married, native of Germany, at the time of his admission on December 29, 1893, 37 years old, had sustained a rather severe *trauma capitis* in 1891. He had always enjoyed the reputation of a model workman, zealous of his employer's interest and inclined to overwork, unfortunately resorting to strong stimulants whenever his physical endurance threatened to give way under the strain. At our first meeting, in May, 1895, he presented the picture of intellectual confusion with a deep undercurrent of religious emotion. He was soon removed from his uncongenial associates on one of the then called aggressive wards, put to work of his own choice, and placed on a footing with the regularly employed help. Tenderly and by degrees he was led out of the labyrinth in which his psychic self had lost itself completely. The chaos cleared, but a persecutory delusion remained immovably fixed and threatens to retain its hold for the remainder of our patient's life. Spurs are not required in keeping this indefatigable worker employed; on the contrary, I feel at times called upon to apply restraining influences. My searching analysis into the psychic main springs of all this unusual zeal was soon rewarded by the discovery of a veritable gold mine of human love and compassion for his fellow-sufferers. Whether he molds a Hodgen's splint, makes a wheel-barrow, builds a stage or performs any other work about the place, his "Leitmotif" is the burning wish of rendering the earthly existence of his poor sisters and brethren as happy and comfortable as it is in his power to do. What higher incentive for our labors could be found in the treasure-house of our ethical possessions than the love for our kind? Unfortunately such a patient is a rare specimen, a jewel among a thousand. Clinical experience teaches us that as a rule grossest egotism overshadows the entire being of the psychically afflicted; their personal grievances and sufferings are so all-absorbing as not to allow even a single ray of human love and sympathy to penetrate the gloom of their self-centered inner life. It is certainly a matter of common experience that in all forms of psychic disease the ethical self is the earliest and the severest to suffer. Most of

our patients know only too well that they need not work and can not be made to work; the simple knowledge of having their entire support provided for rarely acts as a stimulus, as they feel no obligation toward the charity-dispensing power for the rather plausible reason that their detention at the hospital is persisted in against their will and in the face of their most emphatic protests. What special inducements are we able to offer to get them to work? Of such we have at our disposal some of a lower order and others of a higher one. It is true we have with us some few patients who have been allowed to act out of their delusions in filling places of usefulness in our little world. An aged man, admitted in 1870, regards himself a sworn officer drawing a monthly cheque for his services in the different departments of the institution. Another man, admitted in 1869, believes himself sole proprietor of the stable and its adnexa, and works about its premises with the zeal of proprietary interest. A woman, admitted in 1891, claiming the ownership of one of the convalescent wards, would not let her scrubbing brush rest at any time if not interfered with. This is all wrong, of course, but when I faced these and similar cases it would have been too late to apply a remedy. Any attempts on my part at interfering with the attitude of these patients would have caused at this late day needless suffering without the slightest promise of remedial results. The practice of utilizing the delusional sphere of our patients as an incentive to the performance of labor may easily be branded a crime against sound psychic therapeutics. Somewhat more excusable are inducements in the shape of extra meals or other things appealing to the material nature of the patient. They are particularly unobjectionable in cases of slight dementia, no matter what the primary psychosis might have been. Here we meet with a more or less pronounced automatism, and hardly any psychic damage can result. In extending to some patients the privileges enjoyed by employees, including meals at the latter's table, we add an element of heightened self-respect, which palliates the purely material nature of the measure. On occasions we are able to infuse a psychic interest into the most menial labor by carefully explaining to the workers the higher purpose of their efforts. After my little dissertation on the positively ante-diluvian use of stone walls around the grounds and

of palisades around airing courts our patients took a special pride in the destruction of these abominations. The purpose of a new stage or of an open-air pavilion, with hints at the good things in store after their erection, added a zest to the work of our amateur carpenters which no extra lunch could have produced. But, after all, these are special occasions and only a limited number of patients can be reached in such a manner. In the daily routine of institution life we have grown accustomed to employ a goodly number of patients in the different departments. How much actual benefit may be derived from these varied occupations will to a great extent depend on the nature of those who are directing the work. For this reason it would be highly desirable to have all employees pass through a course of training similar to the one exacted at training schools for attendants. No one can deny that an engineer and a laundress, who have acquired some knowledge of the psychic material about them, would prove of unquestioned assistance to us in our efforts toward influencing the psychic selves of our patients. One of the unwritten—none the less implacable—rules with us is that no patient is ever called upon by an employee to perform the latter's labor; an attendant working with a squad of patients is not supposed to mount guard over them, but must wield the spade, pickax or pruning knife in the van of his fellow-laborers.

In any discourse on the employment of the psychically afflicted great prominence is given to industrial labor and that in farm and garden. This is as it should be, as in this manner the entire problem is shifted to a broader basis. I have no personal experience with industrial departments, mainly for financial reasons. While I am an avowed advocate of this form of occupation, I should not fail to impress upon the minds of our legislators the fact that, upon the introduction of industrial labor, its remedial nature should never be lost sight of. As considerable capital is invested in the plants, a tendency to operate them with a view of showing a balance on the right side of the ledger, could readily assert itself, and some patients might be put to work who would fail to derive any benefit from the labor, nay, might be positively harmed by the enforced occupation. A great field for valuable clinical investigation is open in the study of somatic and psychic effects of such labor on the different clinical forms of psychic disease, and I hope that those of our colleagues

who are financially least hampered will give us some day the results of their experiences.

It appears to be perfectly proper to apply to our patients the adage, "Every laborer is worthy of his hire." The consciousness of being a wage-earner is a legitimate psychic stimulus, hence patients performing actual labor should receive small pecuniary emoluments which should be expended as far as possible in accordance with the earner's wishes, preferably for the benefit of the needy members of his family. To direct the patient's wishes would prove an easy feat of suggestive therapeutics. The same course should be pursued with regard to out-door labor. The beneficial effect of exercise and work in the open air on the physical health is self-evident, but such work does not stimulate *per se* psychic function. This is clearly exemplified by the mental evolution, or, rather, involution, of the average farm hand. While the farm-owner finds psychic stimulation in the proprietary interest in the products of his labor, in his home life and relations to his community, his white slave, the farm hand, is offered but scant food for mental growth by the drudgery of his daily existence and work, and remains to his grave a pronounced psycho-asthenic. Our patients should be dealt with more like farmers than their hands. Our out-door labor is never to be carried to extreme fatigue, which would prove an obstacle to psychic stimulation after the work is done. I would suggest that patients be put in charge of small areas of land, and receive a certain compensation for the proceeds of their labor. All this is particularly important in dealing with the permanent denizens of our institutions. Convalescents, especially those to whom the occupation is a novelty, will find "amusement growing out of their work" without any additional inducements. The squads of lawn-mowers, rakers, etc., consisting of a physician, a minister, bank clerk, pharmacist, and other men belonging to professions or various pursuits indigenous to city life, find as a rule a great deal of mental exhilaration in the, to them unusual, nature of such occupation. I have placed a pictorial artist in charge of our flower beds, and have watched with gratification the gradual growth of his interest in the welfare of his beautiful wards. The almost loving care of flowers bears within itself a powerful psychic stimulant which can hardly be looked for in the cultivation of cabbages and onions. Our flower gardener

has of late been intrusted with the distribution of cut flowers among his fellow-patients, which has added to his work a human interest.

After we have done what I said we are doing and should do, there still remains a sorely-felt hiatus in our work: our patients must of necessity spend a great many hours on the wards, and here the lack of unceasing psychic stimulation is most keenly felt. A radical change in this direction can only be expected by the employment of some men and women who, combining natural gifts and training, will play the part of psychic agents, their whole task to consist in the stimulation, by their personal influence, of the minds that are too sluggish for spontaneous effort. Such people should command a high salary, as a matter of course. In connection with this I hold that the most needed future increase in our financial expenditures must be chiefly in line of better compensation of a higher class of help. A corps of well-paid, carefully selected and trained attendants is a *conditio sine qua non* in successful psychic treatment of our patients. Parenthetically, I will mention my strong belief in the living influence as an educational factor, in the training of our attendants. In accord with this view have I entirely discarded all printed rules six years ago, and I have yet to regret this step. I have found that our attendants receive more lasting impressions from our living example than from a hundred pages of printed rules. To facilitate the closer communion between them and the patients uniforms were abandoned several years ago; this has been followed by beneficial results, especially in removing the last vestige of military discipline so odious in a hospital aspiring to individualization and psychic stimulation in the treatment of its patients.

In conclusion of this cursory review, I do not hesitate to give expression to a feeling of satisfaction that, no matter how uncertain and ill-defined the scientific foundation of psychiatry of to-day may be, psychic treatment, even with its present limitations, has cast off the swaddling clothes of empiricism. Whatever the future may have in store for us in the way of brilliant discoveries, our present efforts to restore suffering man to his pristine psychic entirety, or to save him from irreparable damage in his psychic possessions, will ever hold a place of honor in the storehouse of human endeavor.

THE INSANE CRIMINAL.

By BUTLER METZGER, M. D.

*Assistant Physician, Massachusetts Asylum for Insane Criminals,
State Farm, Mass.*

A few results obtained by an analysis of the last 400 cases admitted to the Massachusetts Asylum for Insane Criminals may be of interest. The term "insane criminal" is here used to cover both the "criminal insane," *i. e.*, the man who is insane at time of commitment of crime, and the "insane convict," *i. e.*, the man who becomes insane while serving sentence. The insane criminal cannot be regarded as one of a special class of offenders. Both his insanity and his criminality are the expression of a bad heredity, plus a certain effect from his environment. Either the mental weakness or the illegal act may have appeared first, depending more or less on external influences. The effect of heredity is very marked. The more carefully individual cases are investigated, the higher rises the proportion of relatives showing degenerative characteristics. Of 266 cases in which a history has been obtained, among the last 400 patients admitted to the Massachusetts Asylum for Insane Criminals, 59.4% have a bad family history in regard to insanity, epilepsy and alcohol. Of the 149 cases admitted during the past two years (during which time the question of heredity has been looked into somewhat more carefully), a history of heredity was obtained in 128, and of these, 92 persons, or 71.9%, are known to have a bad family history. Of these 92 cases, 70 individuals or 76%, have had either a hard drinking father, mother, or both. Of these same 92 cases, there is a family history of insanity or epilepsy in 32 persons, or 34.7%—existing in parents 12 times, brother or sister 9 times, other relatives 11 times.

The results of investigation at the Matteawan State Hospital, New York, show even higher figures. Of 382 male cases admitted since 1888, in which a history was obtained, 54% had a

family history of insanity or epilepsy.¹ In the case of criminals: of the 9933 men who have passed through Elmira Reformatory, New York, 10.6% have a family history of insanity or epilepsy. There was also a knowledge of drunkenness in the ancestry of 36.2% of all admissions.² Of 233 prisoners at Auburn, New York, "23.03% were clearly of neurotic stock."³ Sichard, studying 4000 criminals, found an insane, epileptic, suicidal or intemperate heredity in an average of 30.3% of all classes of thieves, sharpers, incendiaries and sexual offenders.⁴ It would appear that the patients, both at the Massachusetts hospital and the similar one in New York State, have a higher percentage of morbidity in the ancestry than the ordinary criminal.

Crimes.—The crimes committed by the "insane criminal" are as various as those of the ordinary offender. The comparatively high proportion of crimes against the person is shown by Table No. 1. Moreover the Massachusetts Asylum for Insane Criminals receives a large number of vagrants (111 in the 400 cases cited), and this large group lowers the percentage of crimes against the person and property, while raising that of offences against public order.

TABLE No. 1.

CRIMES.	Of 27,457 persons sentenced in Massachusetts during the last year. ^a	Of 400 admissions to the Massa- chusetts Asylum for Insane Criminals.	Of 2453 admissions to the Matteawan Hos- pital, N. Y.
Against the person.....	6.0%	24.75%	36.32%
" property	11.8%	29.75%	52.14%
" public order.....	82.2%	45.50%	11.54%

Age.—The age at which some of these patients started on their criminal career is of interest (see Table No. 2). Taking the 98 men in the four classes given below of "breaking and entering," "larceny," "robbery," and "assault to rob," 56.1% had been arrested before the age of 20, and 84.7% before the age of 25.

Recidivism.—The majority of insane criminals are multiple offenders. Taking some of the larger classes; of those in whom histories were obtained, 57 breaking and entering cases averaged 4.6 arrests; 36 "larcenies" averaged 3.5 arrests; 13 "rob-

beries" averaged 7.7 arrests; 4 habitual criminals averaged 4.5 arrests; 29 "drunks" averaged 5.3 arrests; but of 9 murderers only one had been arrested twice. Of those arrested more than ten times, two had been in the hands of the law 11 times, one 12 times, one 13 times, one 18 times, two 20 times, one 22 times, one 23 times, and one 42 times.

Type of Insanity.—All types of insanity are represented among these 400 cases. The imbeciles without delusions appear quite prominently, 56 or 14% being classified as such. There were 24 paretics, or 6%.

TABLE No. 2.
AGE AT FIRST ARREST.

CRIMES.	under 15	15-20	20-25	25-30	30-40	40-50	50-70	Average.
Breaking and Entering...	9	23	18	4	..	1	..	18.9 years.
Larceny	3	10	8	4	2	1	1	24.1 "
Robbery	4	4	..	2	..	..	..	17.5 "
Assault to Rob	2	2	2	..	..	1	..	18.7 "
Habitual Criminal	2	1	..	..	..	1	..	30.0 "
Assault to Kill	2	..	5	2	3	..	3	29.8 "
Assault on Female Child ..	..	1	..	1	1	..	3	44.3 "
Manslaughter .....	..	..	1	1	2	..	..	29.0 "
Rape .....	..	..	1	2	2	..	..	26.2 "
Assault to Rape .....	..	..	1	1	2	1	1	38.1 "

The percentage of cases of dementia praecox is very large, but many of them also have a strong alcoholic factor or an element of imbecility. Similarly, many of the cases classed as alcoholic are of very unstable mentality and might possibly have become insane, even if they had not been intemperate.

Irresponsibility.—Attention has been called several times by various writers to the large numbers of insane men who are committed to prison, with their mental defects unnoticed or disregarded by the Court before which they were brought. That too much stress cannot be laid upon this subject is shown by the following figures:

Drs. Villeneuve and Chagnon, in their article on "Judicial Errors,"* show that 255 men were sent from the prisons of Paris to one infirmary during the five-year period '86 to '90, who were insane at the time they received their sentence. During the next five-year period 117 men were removed to

St. Ann Asylum in Paris, who were condemned to prison while insane. In Germany, 2.7% of the prisoners at Waldheim were sentenced while insane. In the Province of Quebec, Canada, the inspectors of prisons give 699 insane men condemned to penal institutions in seventeen years. These authors (Drs. Ville-neuve and Chagnon) stated two years ago that in the Montreal jail, which receives practically one-half the condemned in the Province of Quebec, "since 1894 not a single case was met whose insanity did not antedate the trial and committal." Dr. Allison, Superintendent of the Matteawan institution, stated before the Medico-Psychological Association in 1898, "out of 179 insane persons who have committed murder, over 53% were received from the prisons, having been convicted and sentenced for life. So far as it is possible to judge from their histories, and from the character and course of the disease, at least 40% of such convicted persons were insane at the time the crime was committed."

The last 400 admissions at the Massachusetts Asylum for Insane Criminals have been investigated, and the following results have been obtained. Judgment is based both on their histories and on a personal acquaintance with the majority of the cases. All doubtful cases are thrown out.

Of 64 breaking and entering cases, 18 cases were, as far as can be judged, insane at the time of their trial. Six of these were recognized as irresponsible and not sentenced. The 12 remaining were sent to penal institutions. Of 31 "larcenies," 18 were apparently irresponsible. Fifteen of these were sentenced. Of 39 "drunks," 14 were irresponsible, and but 2 recognized as such. Of 17 "assault" cases, 6 were irresponsible, one of them recognized as such. Of 14 robbers, 7 were irresponsible. One of these was recognized as insane and sent to the asylum. Of 17 "assaults to murder," 10 were irresponsible. Of these, 5 were recognized as insane. One in addition was possibly considered insane but was kept five years in prison before being sent here. The medical certificate of the physicians who recommended his transfer reads: "We feel that he was insane at the time he was committed, although he was not reported as he was harmless, etc." Of 10 murderers, 5 were irresponsible and all were recognized as such. Of 10 "assaults

with a dangerous weapon," 6 were irresponsible and 3 of them were recognized as such. Of 5 "rape" cases, 3 were very marked imbeciles but all were sent to prison. Of 6 "assaults to rape," 2 were insane, one of them recognized as such. Of 6 "assaults upon female child," 5 were irresponsible, 3 of them recognized as such. Of 3 "indecent assaults," one was insane and sent to asylum. The other two had as much or more mental enfeeblement but both were sentenced. Of 4 "habitual criminals," 2 had had systematized delusions for over ten years, one for several years before sentence, and the remaining man was an imbecile. All received 25-year sentences. Of 3 "idle and disorderly" cases, 2 were palpably insane and one probably so, when sentenced. Of 3 cases of stubbornness, one was an epileptic, one a marked imbecile, and one neurasthenic with delusions at times. All were sentenced. Of 2 sentenced for "non-payment of fine," one was an epileptic, the other in the beginning of dementia praecox. The one perjurer was a paretic. Of 3 swindlers sentenced, one was a paretic, one a very low grade imbecile. The man sent to prison for malicious mischief was a case of acute mania at time of arrest. An investigation of the vagrants showed what might have been expected by any one who comes much in contact with this class. Of 111 men sentenced as tramps, 92 were clearly irresponsible and should have been sent to an asylum in the first place. Only one was recognized as insane. The great bulk of the "hobo" class is degenerate, but only those who are troublesome attract enough notice to have their mental condition examined, otherwise very many more would become inhabitants of an insane hospital. It is not advocated that every mildly demented or moderately deficient man should be committed to an institution for the insane, but a careful examination before sentence would weed out many cases that sooner or later will be a serious menace to the community.

The offence committed by an individual is not always a criterion by which to judge of his danger to society. The four patients in this institution regarded as most dangerous to others were sentenced respectively for "drunkenness," "vagrancy," "assault and battery," and for "assault to kill." To sum up these cases, out of 400 men, 216 were apparently irresponsible

at the time they were tried. Only 40 of these were recognized as such.

During the years 1895 to 1900, inclusive, there were 778 persons transferred from the penal institutions of Massachusetts to the insane hospitals.* With the increasing interest which is being shown in all efforts which tend towards the prevention of crime and insanity, it is probable that a plan looking to a medical supervision of all arrested individuals would receive considerable support. The experiment is more easily made in the larger cities, and in these lies the greatest necessity for such oversight. During the year 1900, 11/13 of all arrests in Massachusetts were made in the cities. The demands on the examiner's time would probably not be excessive as only six of these cities averaged eight or more arrests per diem. These municipalities go to the expense of providing physicians for their poor, probation officers for those offenders who are deemed worthy of another trial, and in one city at least police surgeons to attend to those ill at station-houses. It would seem possible that some system might be arranged, in the cities at least, looking toward the examination, by a competent medical man, of all arrested persons. The details, as to whether the work should be done by the city or jail physicians, or by special appointees, is left open to discussion.

The group of 400 cases which has been analyzed above is too small to be used alone as a basis for conclusions regarding the so-called insane criminal, but the results are given to be added to the work which has already been done by investigators in this line.

BIBLIOGRAPHY.

1. Report of Matteawan State Hospital, 1900, p. 52.
2. Report of Elmira Reformatory, New York, 1900, p. 45.
3. *The Criminal*, Havelock Ellis, p. 92.
4. *Ibid*, p. 93.
5. Massachusetts Prison Commissioners' Report, 1900, p. 209.
6. *American Journal of Insanity*, October, 1899, p. 243.
7. *Transactions Medico-Psychological Association*, 1898, p. 200.
8. Massachusetts Prison Commissioners' Report, 1900, p. 242.
9. Report of Matteawan State Hospital, 1900, p. 68.

Notes and Comment

PROCEEDINGS IN THE CZOLGOSZ CASE.—The people of the United States are to be congratulated upon the good sense and decorum which marked all proceedings connected with the trial of the assassin of President McKinley. With a sickening recollection of the painful and disgraceful scenes attending the trial of Guiteau, it was not strange that many persons feared a repetition of similar scenes at Buffalo. That these were avoided and a speedy and orderly trial of the wretched prisoner was secured seems to have been due in great measure to the good judgment and sagacious activity of the Bar Association of Buffalo, a body which recognized the danger and promptly took measures to prevent it. When it became evident that the prisoner would make no effort to procure legal assistance, this association, through its officers, to prevent the appearance upon the scene of shyster lawyers or police court practitioners, arranged that two ex-justices of the Supreme Court of New York should be assigned to defend him. These were high-minded and conscientious men who did all that justice to the misguided offender required to be done. They were immediately confronted with the possibility that Czolgosz might be insane and irresponsible on this ground, and it became all-important to determine his mental condition. It was accordingly arranged by the prisoner's counsel in consultation with the representatives of the Bar Association that two experts should be asked to examine the prisoner and to report upon his mental condition. Accordingly, Dr. Carlos F. MacDonald, of New York, former president of the State Commission in Lunacy, and Dr. Arthur W. Hurd, of the Buffalo State Hospital, were summoned to examine Czolgosz and to report upon his mental condition for the information of those who had been charged to conduct his defense. If these gentlemen pronounced the prisoner insane, it became the duty of the defense to summon witnesses and to provide for an

inquiry into his mental condition. Every facility was afforded to the expert physicians to make an examination of the prisoner, and most conscientiously and carefully was the duty performed. The prisoner was seen several times and his condition was thoroughly investigated. Although he remained entirely mute and was unwilling to say a single word to his examiners, he complied readily with all requests as to walking, closing his eyes, assuming bodily positions to facilitate the examination, etc., and by his actions showed that he comprehended everything which was said. He was physically well and gave no consistent symptom of mental disorder. The experts, in behalf of the defense, had consequently no difficulty in joining with Drs. Putnam, Crego and Fowler, of Buffalo, who had seen the prisoner at the time of the shooting and subsequently at various times, in signing a document to the effect that he was not insane and irresponsible. On the following day the voluntary character of his mutism was shown by his plea before the court and subsequently by his interviews with the priest and officials in Auburn prison. This document was accepted by the defense as settling the question of Czolgosz's mental condition, and subsequently upon the trial no evidence for or against his sanity was introduced. The criticism has been made that expert evidence as to the sanity of the prisoner ought to have been introduced in order that the record might be complete, but to this it has very properly been replied that in the absence of any allegation of insanity and irresponsibility it would be irrelevant to give testimony to show the sanity of one accused of crime. Dr. Putnam, one of the physicians who had previously examined him, has stated in the Philadelphia Medical Journal that Czolgosz did not at any time sham insanity; that although he refused to discuss his crime with his lawyers he did discuss it with others; that in conversation and appearance he was more intelligent than the average Polish laborer; and that physical examination showed his pulse 82, temperature $98\frac{1}{2}^{\circ}$, tongue clean, skin clear, patellar reflexes normal and heart normal—a record of excellent health. In the light of these statements, it would have been a waste of time to present expert testimony to show the absence of mental disease. The burden of responsibility assumed by the experts who examined the prisoner on behalf of the defense was a heavy one, and we

cannot but congratulate them that their duty in the case proved so plain. Had it proven otherwise, we know that equally conscientious testimony would have been given upon the side of the prisoner. It is to the credit of American psychiatry that the decision of well-known experts in insanity was accepted as conclusive. We hope that in similar cases in future we may have an equally unanimous acceptance of the verdict of competent experts.

CHANGE IN DATE OF MEETING OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION AT MONTREAL.—It has been learned that the dates (June 10-13, 1902,) which had been set for the Montreal meeting will conflict with those for the meeting of the American Medical Association at Saratoga. The Council has therefore determined upon a change of dates for the meeting of the American Medico-Psychological Association to the third week in June. The chairman of the committee of arrangements, acting under instructions from the Council, has accordingly engaged accommodations for the Association at the Windsor Hotel, June 17, 18, 19 and 20, 1902.

THE MENTAL CONDITION OF POLITICAL ASSASSINS.—In a late number of the *Philadelphia Medical Journal*, Dr. Charles K. Mills, of Philadelphia, presents an excellent paper on "Political Assassinations in some of their Relations to Psychiatry and Legal Medicine." He divides political assassins into four classes, sane and insane conspirators, sane degenerates and degenerates of doubtful sanity. Among sane conspirators he classes the Orloffs who assassinated Peter III of Russia, Count Pahlen and others who put to death Paul I of Russia, Anckarström who shot Gustavus III of Sweden, J. Wilkes Booth who shot President Lincoln, and the Nihilist assassins of Alexander II of Russia. We are somewhat surprised not to find mention of Balthazar Gérard, the assassin of William of Orange, among these sane murderers. Among insane conspirators he mentions Ravailac, who murdered Henry IV of France, Louvel, the assassin of the Duc de Berry, and Guiteau, who shot Garfield. Among degenerates he classes Jacques Clément who murdered Henry III of France, Charlotte Corday who stabbed Marat, Santo who stab-

bed Carnot, Golli who assassinated Canovas the prime minister of Spain, Luccheni who killed the Empress of Austria with a file, and Bresci who shot Humbert. Some of these criminals he believes to have been sane and others of doubtful sanity. He makes an excellent distinction between degeneracy and insanity, defining the former as "the undoing of a kind" and a change from a higher to a lower type of mental development. He queries whether or not Czolgosz may have been the tool of a band of conspirators and influenced by them or whether he was unaided and acted upon his own initiative, and seems to incline to the latter view. He believes that a degenerate may be capable of entering into a conspiracy, and that certain degrees of degeneracy do not preclude such concerted action. Some groups of degenerates were undoubtedly concerned in the assassination of Alexander II, Canovas and King Humbert. In other instances, as in the case of Clément and Ravailac it is evident that degenerates were made the tools of men who possessed normal mental faculties.

In reference to the disposition to be made of political assassins, he makes the following suggestive statements:

"What should be done with political assassins? Let us glance at what has been done with some of them in the past. When Jacques Clément stabbed Henry III in the abdomen, the king instantly wrenched the knife from his body and struck his assassin in the face with his bloody weapon, and a moment later the attendants and guards fell upon the assassin who died pierced by twenty sword thrusts. Ravailac after a speedy and formal trial was torn to pieces by horses. Anckarström was flogged on three successive days and then beheaded. Charlotte Corday, Louvel and Santo were guillotined. The assassins of Peter III and Paul I were protected and some of them even rewarded by the legates of their crimes. Booth was shot to death by Boston Corbett, one of the soldiers engaged in his pursuit. Of the Nihilists who killed Alexander II of Russia, one was blown to pieces by the same bomb that killed the Czar, and five others were hanged two days later. Guiteau was hanged after a prolonged and tedious trial. Golli was executed, probably by garroting. Luccheni was imprisoned for life, as according to the laws of the Swiss Canton in which the crime was committed, the death penalty could not be inflicted. Bresci was imprisoned for life but soon committed suicide. A few days after the publication of this article Czolgosz will be electrocuted.

Some seem to favor the infliction of punishments that rival those of post-medieval times; others cry out for execution without even the form

of trial, and still others after the form but not the substance of a trial. Just punishment should be inflicted but it should be done by due process of law. Whenever possible, efforts should be made to reach those who are the real instigators of the crimes. It is probable however, that in the case of the insane and degenerate the infliction of the death penalty does not always lead to the results which are hoped for in the protection of society. Krafft-Ebing says of the political paranoiacs that they do not fear death, as it stamps them as martyrs in the eyes of their followers and he holds that the true punishment for them is the asylum. If the asylum means a place in which they can be safely confined during the rest of their lives, this opinion is, for the insane, correct. I have seen two men of the class referred to by Krafft-Ebing hanged and have had interviews with others a short time before their execution. In all cases they have shown an indifference to death and, in some, have looked upon the scaffold as a place where they could pose as heroes and martyrs. The great publicity which is given to the details of execution certainly does much harm."

These words are sensible and timely, and emphasize the statement made long ago by Blackstone, that "the execution of an offender is for example, *ut poena ad paucos, metus ad omnes perveniat*; but so it is not when a madman is executed, but should be a miserable spectacle, both against law and of extreme inhumanity, and can be no example to others."

AMERICAN HYSTERIA.—If it is too early to pass final judgment upon the mental condition of Czolgosz, there is no untimeliness in commenting upon a morbid manifestation of the American mind with reference to his crime. Recent deplorable exhibitions have illustrated more than ever before the wide prevalence of cerebral insufficiency among our people, or a weakening of what Janet has called the faculty of psychological synthesis. For want of a better name we might call it hysteria without going far astray in our disparagement. We have seen once more that with all our vaunted self-poise, mankind in the mass is suggestible to a marked degree. For a time our beloved Republic seemed to have lost its head in discussing the doctrine of anarchism in its relation to the President's assassination, and but for the sober second thought of the better newspapers and wiser pulpits we should have cut a still sorrier figure before the thoughtful world. Thousands of our people forgot wherein our chiefest blessing lies and why this country

of ours is what it is. For surely there is no safety for the individual or for the republic if, in this stage of our civilization, the attempt should be made, as was gravely proposed by some, to regulate by law private opinions as to government, or to hinder the full expression of them if so be there is no overt treason or incitement to violence. There is no principle more essential to the maintenance and development of our institutions than free discussion, and most alienists will admit that anarchists are not more but less dangerous if they are given an opportunity to blow off steam in vapid discussion of their crazy doctrines than in being suppressed by inquisitorial police measures that have no place in our polity. It is time enough to interfere when the law of the land is defied and when the spirit of assassination is invoked, as witness the fatuous conduct of the American citizens who assembled at the Glasgow Exhibition and dragged the fair name of America in the mire by adopting a resolution expressive of their regret that Czolgosz had not been lynched on the spot. Happily this resolution advocating murder is offset by the noble words of the wretch's victim, "Let no one hurt him," a sentiment that will live in the hearts of the people when posterity shall have weighed the magnicide in the balance and marvelled at the deliberative body that met in a foreign country to set it at naught. The temptation is strong to assign Czolgosz and anarchists of his stripe to that borderland of psychopathy that implies by reason of inherent defect of structure a limited responsibility, but it is well to suspend a critical judgment till all the evidence is in. In the meantime is it not worth while to ponder, notwithstanding its tainted source, the utterance of the wife of a notorious Chicago anarchist who paid the penalty of his crime with his life fifteen years ago? This woman, herself an anarchist, is reported to have pronounced the action of Czolgosz as "the deed only of a lunatic," because in her opinion no person of sound intellect would assail the head of the government in a republic where the chief executive is chosen by popular vote and holds his office for only a limited time.

TRAINED NURSES AND HOSPITAL MANAGEMENT.—This appears to be the age of conventions and congresses. Sometimes

these gatherings have an apparent *raison d'être*, sometimes it is difficult to imagine one. Occasionally there is, with commendable honesty, no reason given for the assemblage beyond the wish more or less spontaneous of a number of individuals to get together and exchange views.

The latest congress whose proceedings have been given to the reading public is the "International Congress of Nurses." The first nurses' congress was held in Chicago in 1893, and its proceedings may be read with interest and are to be commended for being confined to a legitimate discussion of nursing, the training of nurses, and cognate subjects. Since 1893, however, a new century has dawned. With the progress of time there seems to have been, if one may judge from the reports of the proceedings of the International Congress of Nurses in the *National Hospital Record*, a growing belief that the functions of a nurse are not so much to nurse as to criticise the management of hospitals, the conduct of boards of managers and the manners and morals of physicians.

The writer has for a long time believed that in every training school for nurses a systematic training in ethics would be of as much, if not more value, than much that is now taught. It is not to be denied that the trained nursing of the present day is far ahead of the "rule of thumb" nursing of a few years ago, and that physicians and surgeons owe much to their oft-times loyal and efficient aides, the nurses in our hospitals and in private life. Nevertheless, we are fully convinced that much remains to be done in the matter of training nurses in the conduct of life.

Many graduates of training schools, it is true, have been reared in such surroundings that they have already been trained in this respect, but on the contrary many nurses are annually graduated whose home training and subsequent associations have not been such as to teach them the foolishness and harmfulness of gossip, the wickedness of envy and malice and the exceeding foolishness of self-conceit.

We have heard nurses, young and old, discuss the members of the medical staff of the hospital to which they were or had been attached; debating their medical or surgical abilities, their social standing, their customs and manners, in a way that was

glaringly unprofessional and offensive. Not only were the members of the medical profession held up to criticism or ridicule but the managers of the hospital were dealt with with equal lack of propriety or judgment. We recall one nurse who made the boast that she had told the president of the board of managers of a hospital in which she was the head of the training school, that he was "a fool" to permit a surgeon to do certain things to which she objected in the hospital. As we knew the gentleman referred to as a very dignified and punctilious gentleman of the old school and one who never permitted any one to discuss his decisions, we regarded the story as the empty boast of a silly woman who thought to make an impression. If her statement was true it placed her in an equally bad light.

We might have felt that our experience was unique and that we had been unduly impressed by the few badly trained and badly equipped (mentally) women with whom we had come in contact, among the many excellent and admirable nurses we have known and know, had not our attention been called to the proceedings of the International Congress of Nurses.

The good old motto, "*Sutor ne supra crepidam judicaret*," which might have been interpreted for this Congress, "let the nurse not be above her nursing," appears to have been to a great extent disregarded, and we find nurses discussing hospital management, finance, the relations of the state to hospitals, and last, but not least, and by no means the least objectionable, the treatment of patients. We regret that we are compelled in this respect to criticise a superintendent of nurses of a hospital for the insane, who, according to the report before us, "discussed the classification of insanity and the best methods of treatment," commending "hydrotherapy and electricity" !!!

What we have said of the lack of appreciation of the ethical relations of nurses to the medical profession, to institutions, patients and the public is strikingly confirmed by the report of the remarks of a Miss Banfield, superintendent of the Polyclinic Hospital, Philadelphia. Her subject was "Hospital Administration in America."

According to Miss Banfield, "No business is conducted with so little real inspection, no doll's repair shop is conducted with so little skilled labor or when supplied has the skilled labor so

many adverse conditions to struggle against, as the average hospital in the cities of America." Miss Banfield makes the sweeping assertion that as to the balance sheets and reports "the statistics quoted therein are not worth the paper they are printed on, are more often meant to obscure than to inform," and broadly intimates that the financial reports of hospitals are falsified and with deliberate purpose. Miss Banfield has opinions also upon dispensaries and thinks that doctors who feel that too many patients are treated in such places who could and should pay a family physician for the service are "young men who are too lazy to work in it (dispensary) and too incompetent to make their living in medicine." She thinks, notwithstanding what she has said of the lack of skilled labor in hospitals, that "the administration of a hospital should not be in the hands of physicians," as they are "by nature and training unfit for such duties." The lack of training may be admitted. We have long thought that some of our large hospitals should take into training physicians who desire to become hospital superintendents, but how and where did the writer of the address discover anything peculiar in the "nature" of physicians unfitting them for such duties? Some of the best hospitals in the country, hospitals whose reports are reliable and whose officers and managers are honest, capable business men, are superintended by physicians, and by physicians who have been trained by years of hospital work and residence. There are many things both in the manner and matter of this address, with which the majority of those who discussed it appeared to agree, upon which we would like to comment, but we have quoted enough, and the fact that no voice was raised to call the speaker's attention to the fact that she was discussing subjects wholly without the purview of a nurse's convention, is further proof that there is a substantial basis for our contention that nurses in too many instances lack something in their training or in their earlier education and up-bringing. This lack results in either an o'er weening ambition to manage and control, or in a less ambitious but not less objectionable characteristic, a tendency to gossip and criticise.

DEATH OF DR. KERR, OF CHINA.—J. G. Kerr, M. D., a graduate of Jefferson Medical College, Philadelphia, 1847, who was

one of the best known medical missionaries in China, died at his home in Canton, China, aged 77. He was born in Adams County, Ohio, and for a time practiced in this country, but the past forty-five years he had devoted to his work among the Chinese. He was eminent as an operator for urinary calculi, and in 1898 was called to operate upon the American Minister to China. During the last few years he established and superintended an asylum for the insane, something previously unknown in that country, a brief account of which appeared in the AMERICAN JOURNAL OF INSANITY in April, 1899. He also accomplished much in his translations of medical works into Chinese for the use of the students.

WILLIAM McKINLEY.

To the student of psychiatry the character, life and tragic dying of William McKinley present much of interest. It is true that the exalted position to which he had been called, and the sense of martyrdom, inseparably connected with his cruel fate, throw a halo about his memory which tend to make dispassionate judgment of his qualities, a difficult task. At this early period after his loss, we may well doubt whether the American people can properly estimate his true position in relation to those who have preceded him, and to those to come after. He is still, and will long remain, the beloved President of a worshipping people, a sacrifice, whose character is too sacred for analysis. Our emotions are still too much wrought upon for the use of calm deliberation and reason.

Yet he has gone in and out before us for so many years, his work was for so long a period pursued in the fierce glare of political publicity, that much has been shown us of those principles which guided him in safety through one of the most wonderful careers which this country has seen, and which upheld him in the supreme trial with a fortitude as marvelous as it was inspiring. Like some of the knights of ancient tradition, his character seemed to bear a charmed existence. Through all the vicissitudes, trials and allurements of an environment which we may well believe expose all the weak points of any character, his emerged without taint or blemish. Every experience through which he passed seemed only to broaden, chasten and purify it. It has been said of him by one, that he ever moved with such calm deliberation and such a lofty ideal before him, that it would seem that he felt himself chosen for a sacred work. And may we not say with truth, that in this his judgment erred not? Not since the character of Lincoln came before us, has one

appeared that in its unfolding and in its final sacrifice has so deeply stirred the life of the nation.

William McKinley's inheritance was fortuitous. His ancestry was simple, unaffected, strong and vigorous. His childhood was neither stunted by want nor endangered by luxurious inaction. Of the essentials for its full development he had all that was required. His sturdy parentage gave him a well developed, fully rounded and well equipped physical organization. His environment, though unpretentious, had in it all the essentials for the best growth and evolution. Its limitations were just such as would call forth and strengthen all the tendencies of independent activity and self-reliance. His boyhood was passed in the simple environment of the village and among working men and women. He was a good boy. He was by no means perfect, but he was never bad, in any sense. He never did violence either to his body or to his mind. He came to early manhood at the stirring period of the civil war. He promptly answered his country's call. Among the added temptations of army life he held steadily to those rules of conduct which later marked him as a type of true manhood. Filial in his affections, correct in his life, when in the circle of his family,—when removed from these influences, his strong sense of right and his steadfast adherence to principle, still protected him. He did his duty as it was presented, without ostentation. His conduct brought him the commendation of his superiors in rank and a steady promotion.

When the war closed, he took up his preparation for his profession with the same quiet determination and steadfastness of purpose. He was self-reliant, because his inheritance and his condition in life helped him toward it and compelled him to it. He made friends universally. The commencement of his professional career was modest. The help which came to him as he progressed was such as was attracted by his upright and manly conduct. That in his nature which made him a good and loyal son, early attracted him toward the service of his country. It was natural that it should be so. His intense patriotism was the legitimate outgrowth and expansion of his affection for his parents and his devotion to home. He was, during his after years, a politician of the nobler type. Tactful and resourceful in an unusual degree, he used these qualities and the

advancement they brought him, for his country's good. He became, in the best sense, the representative of his fellow countrymen. He studied to represent them, but always to represent them for their good. In this he was remarkably successful. It has been said sometimes by way of criticism in this respect, that he followed, but did not lead. He followed, however, always only that which was good in the aspirations of his fellows, and, in doing this, led them forward so gently, with so little display of leadership and with so little antagonism, that to those who are attracted by the brilliancy of radical positions and extreme views, he sometimes appeared weak. Is it weakness to strengthen the good, to discourage the evil, and to develop in a practical, effectual and sensible degree that which is best in every one, and to eschew an extremism, which, while fascinating, is always of doubtful safety? For a quarter of a century, he has been a national character in many of the most trying periods of the country's history. He was never inconspicuous, not because he pushed himself forward, but because he naturally won this position from his fellows. Looking back, how many mistakes can we note in his course of conduct? Who can point to fewer in any public servant who has been so long before us? And is this not the ideal of statesmanship? He led only where it was right to lead, safely, conservatively, courageously, and often with that courage which is seen in self-restraint rather than aggressiveness. Moral courage is often manifested by holding in check impulses which seem to appeal to the sentiment of the masses. It is often easier to go with the tide which seems to lead to danger, rather than to oppose it in the direction of safety by unattractive conservatism.

A few characteristics of William McKinley thus stand out most conspicuous. He was a dutiful, loyal and devoted son. His affection for his parents and his devotion to their care were so constant and zealous that a few thought them an affectation. Would that there were more such;—his was a loving devotion, manifest in his youth, as in his maturity; in private as in public, and that never forgot. Likewise he was a tender husband; kind, sympathetic, patient. He cheered, sustained and soothed with a most helpful courage and wonderful thoughtfulness, his invalid wife. He never forgot the wishes and preferences of the woman

who, by her illness, had become dependent upon him for almost every thought.

His conduct was marked by an adherence to principle that was really marvelous. Through the most varied scenes, with temptations of all degrees and kinds about him, he was never found wanting. What he considered his duty he adhered to inflexibly. There was no courage lacking here. In dealing with principles there was no yielding, no thought of sacrifice, but with men a different view of his character was seen. He was by nature most lovable. He dreaded to give pain or to say that which was unpleasant. He was never better pleased than to be the bearer of good fortune to others. He did not ask a return. It was a pleasure for him to assist, and he was so anxious to avoid causing distress that it sometimes raised false hopes in those who sought his aid. To be just, it is said that it is sometimes necessary to be cruel. Certainly it is necessary at least to disappoint, and here, if anywhere, was William McKinley's lack. To judge aright, it was often necessary to consider not only what he said, but what he left unsaid. His delicate tact and his lovable nature led him sometimes to keep back what he felt would bring pain.

In all public affairs, however, he was a wise counsellor. His capacity to catch the trend of public sentiment and to turn it to the good of the country was wonderful. Few have excelled him in ability to read aright the portents of the future and to make wise use of the tendencies that he saw in his fellow men.

As governor and president he took an intelligent interest in all charitable institutions. Particularly, as Governor of Ohio, he had a thorough knowledge of the hospitals for the insane of that State and gave them ever a watchful care. He knew thoroughly the personnel of their management and was a friend and strong supporter of a liberal and progressive system of treatment. His training and surroundings, however, and his experience as a representative of the people in national affairs, fitted him more particularly for the solution of national economic problems, and in this work he was unexcelled. By this must he be judged, and in his actions here we see the broad philanthropy and the patriotic spirit which made him so lovable a son and husband. His work was constantly to upbuild his country and his fellows, by adding to the resources of the one and by giving to the other a generous compensation for their toil.

What an irony of fate that such a man should be struck down on the plea that he was an enemy of the people, he, whose whole life was given to them, and who had scarcely an enemy among them. Truly the ways of Providence are inscrutable. "God's ways are not our way," and we cannot believe that his unspeakably sad end is lost upon his fellows. Seldom has the great heart of the nation been so stirred. The crucial test of his character came in his cruel and apparently useless sacrifice. Calmly, bravely, nobly, he met his fate, prepared by his long years of faithful devotion to his ideas of right. He did not flinch when put to the test, and in such a calm and holy faith he sealed the influence of his life to the upbuilding of a sorrow-stricken nation.

A. B. R.

Obituary

DR. JOHN CURWEN.

Dr. John Curwen was born at Walnut Hill, in Lower Merion township, Montgomery county, near the city of Philadelphia, on his father's estate, September 20, 1821. His paternal ancestors lived in Little Broughton, Bridekirk, county of Cumberland, England. He died after a brief illness, July 2, 1901. He was a graduate of Yale College of the class of 1841. In 1844, he received the degree of Doctor of Medicine from the University of Pennsylvania. After spending several months at Wills Hospital for Diseases of the Eye, he was appointed during the same year an assistant physician of the Pennsylvania Hospital for the Insane. He was thus brought in close personal and professional relation with Dr. Kirkbride, whose character and administration of this hospital did much to influence and shape the course of his after life. Reference is made in the report of the Pennsylvania Hospital for 1845 to the establishment of a course of lectures for the entertainment and instruction of patients, and to the zeal and co-operation of Dr. Curwen, which contributed so much to what Dr. Kirkbride considered "the very gratifying success of the experiment." The number of lectures varied from forty-five to fifty during the year. Dr. Kirkbride, in a succeeding report, states that "the manner in which Dr. Curwen has acquitted himself of this self-imposed task is worthy of high commendation." In addition to his medical duties he showed at this early age the untiring zeal and capacity for work that was characteristic of his entire life. He resigned his office in 1849.

Dr. Curwen was appointed physician and superintendent of the State Lunatic Asylum at Harrisburg, February 11, 1851, which he organized and administered until February 1, 1881. On the 24th of June, 1881, he was elected physician and super-

intendent of the Warren State Hospital for the Insane, an office which he held until June 15, 1900.

Dr. Curwen was appointed one of the commissioners to locate and build the Danville State Hospital, and at a later period acted in the same capacity to erect the Warren State Hospital. He was appointed a commissioner to locate and erect an asylum for the chronic insane, but subsequently resigned. It may be stated that Dr. Curwen was engaged in hospitals for the care and treatment of the insane, with scarcely any interval, for a period of fifty-seven years—a record of service which has no parallel in our country. In addition to official hospital duties that he performed, he exercised much influence in shaping legislative and public sentiment in the interests of the insane, and his opinion as an expert was often sought in lunacy trials.

Dr. Curwen was an honorary member of the British Medico-Psychological Association; a member of the American Philosophical Association; the American Medical Association; the State Medical Society of Pennsylvania; the County Societies of Dauphin and Warren; president of the State Society in 1869; and trustee of La Fayette College in 1865.

Dr. Curwen was best known to the members of the Association as the secretary and acting treasurer of that body—a double office—the duties of which he performed for thirty-four years. To this faithful officer a lasting debt of gratitude is due for keeping a record of the proceedings of the Association and preserving its archives during this long period. In 1893, the Association conferred upon him its highest honor in his election as its president. He was a contributor to the literature of his profession in communications to the *JOURNAL OF INSANITY*; Medical Societies; through the medium of the annual reports of his hospitals; and on several occasions successfully memorialized the state legislature in behalf of increased accommodation for the insane. He was the last survivor of the company that gathered to organize the American Association of Hospitals for the Insane, now known as the American Medico-Psychological Association, and had a personal acquaintance with each of the thirteen founders.

If it is proper to make reference to some of Dr. Curwen's personal qualities, it can be stated of him that the habits of

fidelity to his trust, and industry by day and night, formed in early life, continued till the last day of his official life, as strength of mind and body remained. He stood for the principles of his profession, and for all it could do to ameliorate the condition of the insane. Nearly sixty years of his life were consecrated to their care. He was loyal to the principles and teachings of his chief, possessed the moral courage born of honest purposes and convictions, and that inestimable quality of Christian character and sympathy for distress and human suffering without which even medical skill and science alone will not always wholly avail in hospital administration. He was a ruling elder of the Presbyterian church. During the years of his official life it was his daily rule to meet several hundred of his patients, as they could be brought together, and lead in a service of scripture reading, song, and prayer, by means of which he hoped to impart hope, comfort, and consolation, and even look for some blessing to come to himself and his work.

A sister and daughter, Mrs. David Fleming, of Harrisburg, survive him. The interment was near Villa Nova.

J. B. C.

DR. EDWIN RUBERGALL BISHOP.

Dr. Bishop was born at Brantford, Ontario, in 1863 and died there, at his father's home, July 24, 1901, after an illness of about a year. He received his preliminary education in Brantford, and graduated in medicine from Trinity College, Toronto. After some medical experience on the Indian reserve of the six nations, near Brantford, he served with the medical corps of the Dominion in the Northwest rebellion, and on his return in the spring of 1889 received an appointment as assistant physician at the Willard State Hospital, under the superintendency of Dr. Wise. He served at Willard until 1893, and became, during this period, a citizen of the United States. He then returned to Brantford and entered upon general practice. The death of Dr. Nellis, in December, 1893, left vacant the position of first assistant physician at Willard, and Dr. Bishop was recalled to take his place. Dr. Bishop married, in 1891, Miss Bessie Gilbert, the daughter of Captain Gilbert, steward at the Willard Hospi-

tal. Mrs. Bishop died in 1894 and Dr. Bishop withdrew from the Hospital, and accepted temporarily a position upon the staff of the Sheppard Asylum. His taste and predilection were for general practice, and after some post-graduate work in Baltimore and New York he settled in Geneva. He married again in 1899, Mrs. Mary M. Nellis, widow of his former colleague at Willard, who died four months later. Shortly after this, while in attendance upon a patient, he contracted tuberculosis, which proved fatal in less than a year.

Dr. Bishop belonged to the group of young men who carried enthusiasm into their work. His hospital service was active and energetic, and there was never any danger of absorption of his time by routine at the expense of his medical and personal interest in his patients and in his profession. His promotion at Willard, even after his withdrawal, was a substantial recognition of his merit while of junior rank. The interruptions and changes, and the afflictions which came upon him, almost overwhelming him at an age when ambition and aspiration are at their height, prevented the full fruition of his hospital employment. Even in the few years of his professional life, he showed much natural ability. When Brown-Sequard announced his faith in the use of testicular extract, Dr. Bishop immediately began experimentation. His short period of general practice at Geneva brought him into general acceptance. He was made health officer of the town, and during his term detected cases of mild smallpox in a travelling theatrical troupe which had escaped notice in the other towns of its progress, and arranged prompt and effective quarantine, so that Geneva escaped the contagion which shortly afterward became very general in Central New York.

Dr. Bishop was tall and slender. He was muscular and, in common with Canadians, much given to out-of-door sports. He was aggressive and insistent in defending his beliefs, but was singularly quiet and gentle, and possessed certain charms of manner which made him a pleasant companion. He was an active churchman, and offered his services as a lay-reader immediately upon graduating in medicine. At Geneva he identified himself with Trinity P. E. Church and became an active parish worker.

A quiet service was held in Grace Church, Brantford, on July 25, and the remains were removed to Geneva, where, after a public service at Trinity, they were interred beside the body of his first wife and the mother of his two boys. May they rest in peace!

DR. FREDERIC C. WINSLOW.

FREDERIC C. WINSLOW, M. D., a graduate of the Northwestern University Medical School, 1874, died suddenly in Chicago, October 10. After his graduation he practiced in Jacksonville, Ill., and was, for eighteen years, assistant superintendent of the Central Hospital for the Insane at that place. After leaving that position he conducted a private sanatorium until appointed by Governor Tanner superintendent of the State Hospital. Governor Yates recently appointed him superintendent of the Hospital for the Incurable Insane, Bartonville, near Peoria. He was a member of the American Medico-Psychological Association and of the American Medical Association.

Abstracts and Extracts

THE NORMAL VARIATIONS OF PSYCHIC ACTIVITIES. Prof. JACOPO FINZI, Florence, Italy. (Abstract by Dr. Edward E. Mayer, Pittsburg, Pa.)

Borderland cases and questions are to-day our most important field for study; typical cases, precise, clear-cut questions and sharply differentiated conditions are everywhere the exceptions. The degrees of mental health and mental disease are innumerable, both quantitatively and qualitatively, and a number of most interesting psychologic, clinical and medico-forensic problems are associated with them. We have three main groups of borderline cases:

1. *The milder types of mental disturbance.*—Many instances of maniacal depression or psychic involution and other conditions are so mild that the alienist never sees them. In paranoia also, the hallucinations may be so little pronounced that they are deemed of no consequence and the individual never comes to an asylum. This is especially prone to be the case with hysteria and epilepsy, the abnormalities often amounting to nothing more than markedly accentuated peculiarities of character, so that we can speak of an epileptic, an hysteric, a paranoiac, a maniacomelancholic character, and so forth. Dementia præcox may show itself at puberty under the forms of neurasthenia and for the remainder of the individual's life leave behind slight peculiarities of demeanor, mannerisms, loss of interest, and other slight defects.

2. *Psychic disturbances in connection with the ordinary organic diseases.*—Every disease influences psychic life. We speak of the delirium of fever, toxic delirium, hepatic psychoses, psychoses from cardiac disease, etc. In most cases, however, we find only conditions of discouragement as in sexual diseases, attacks of fear, as in cardiac disease, or totally unfounded sensations, as euphoria in tuberculosis.

3. *Individual variations of personality.*—We include here the egotist, the immoral, those of one-sided development, defectives, geniuses, many criminals and a large number of degenerates.

It is often difficult to determine the place of given individuals in these groups. It is not possible to include in any one of the three an individual who is just upon the threshold of insanity, since we cannot definitely determine whether his abnormality is a simple physiologic variety, whether it is dependent upon organic alteration, or whether it is a true, although a mild, form of mental disease.

As these conditions are, strictly speaking, pathologic, the expression,

"the borderline of insanity" is not correct. But for practical purposes it is convenient to use this term, since it excludes the idea which accompanies the use of "insane asylum." In studying the normal psyche, however, we meet with so remarkable variations that we might almost be inclined to assume that the true borderland between mental health and mental disease is made up of these variations. We can find in the ordinary manifestations of our psychic life, transient and limited, all symptoms of insanity, and it is clear that in the pathology of the psyche, as in all other studies in pathology, the normal function furnishes the key to all nosologic or pathogenetic theories. The degree and extent of the varieties in a group of persons and the variations in a single individual depend upon the completeness and complexity of these functions.

DEGENERATION. By DR. P. J. MOEBIUS, of Leipzig, Germany. (Abstracted by Dr. Edward E. Mayer, Pittsburg, Pa.)

The popular conception of a sick person is one who feels sick; of a healthy person, one who feels well. Physicians, however, know that many diseases may remain latent for quite a long time; that, for instance, neoplasms may cause no disturbance until they have attained a certain size; that some patients, maniacs, for example, may at times feel extraordinarily well; in short, that the subjective and objective often differ widely. We may be healthy and yet not normal; thus, an individual may have a finger missing. An ideally normal individual is rarely seen. If the abnormality is a permanent retrograde deviation from the normal, of a certain size and intensity, it constitutes a degeneration. Those individuals are degenerate who present transmissible deviations from the normal type, deviations which, if not inherited by the offspring, at least harm them physically or mentally.

Congenital deviations may be inherited or acquired *in utero*. The transmissibility of inherited anomalies is universally recognized but not that of acquired deviations from the normal. It was formerly assumed that all acquired abnormalities could be transmitted. Then came the reaction and it was thought that none could be inherited. Now we assert that alterations in an individual which cause alterations in the germ can produce alterations in the embryo, *i. e.*, in the offspring.

Inherited and acquired degenerations are very similar, inasmuch as the former were acquired at some time and the latter will be inherited in the future. But an acquired degeneration, like syphilis or alcoholism, through healthy intermarriages may disappear in two or three generations. Some abnormalities recur in families, however, without any heredity being proven. No single law is applicable. In cases of acquired degeneration, the degeneration decreases with each addition of healthy blood. About cases in which the defect is not acquired, nothing definite is known. Each seems to be a law to itself.

We can speak of a partial degeneration when the damage to one organ or limb is not severe enough to impair the vitality of the whole organism. The degree and extent of the defect must always be considered. Tuber-

culosis is the only degeneration which does not primarily affect the nervous system. We can ascertain the cause of degeneration only in the acquired forms, although, of course, inherited degenerations must have been acquired at some time or other. The union of germinal vesicles unsuited to each other (*Keimfeindschaft*) is thought to be a factor, but the parental protoplasm must be degenerated before their union. Herein lies a probable explanation of the effects of consanguineous marriages—a multiplication of defects in the species. The borderline between normal and abnormal conditions is still obscure to us. The gross abnormalities have been sought for and found. Numbers and measurements have been used so frequently that the relative physical proportions of man are known. It has been more difficult to demarcate normal from abnormal psychic states.

Encephaloscopy will never give us anything more than a general idea about these conditions. Psychiatry has furnished us with a certain amount of knowledge of the major alterations as they are encountered in the insane asylums; but the minor or milder forms are still very imperfectly understood. Normal psychology lends no aid, as an individual psychology does not as yet exist. Kraepelin's methods come near to it, since they attempt to recognize types and to judge a given individual by definite reactions. Practice must precede theory. We need a mental standard (*Geistige Canon*)—instruction in the proportion of mental capacities. At present personal opinion rules where scientific exactitude is required. Nor will one canon suffice. We are dealing not alone with individuals but with a certain sex, a certain age, a certain people, a certain social standing, etc. Intellectual capacity is not the basis of my conception of mental capacities; I use the term to mean combinations of all the abilities displayed, the strength and direction of all their pursuits rather than the purely intellectual force. The basal desire is of great importance in judging of abnormalities. The type of man, race, sex, occupation and temperament, must all be considered in each case.

Since, therefore, the psychology of the schools does not aid us, we have to depend upon our own instruments. Progress has been greatly retarded by many erroneous ideas which have been put forward and accepted. Some alienists have endeavored to make every noticeable peculiarity a sign of degeneration. Luckily, the healthy are not exceptions; civilization is no destroyer, and only he who sees perversely finds perversions everywhere. Physically imperfect, perhaps ignorant and bad all may be, but certainly all are not degenerated. One error consisted in setting up a degenerative form of insanity, separate from other endogenous forms; another must be recognized in the excessive stress laid upon an hereditary taint as the basis of degeneration. The statistics in psychiatric literature dealing with heredity, based upon the assumption that insanity is a unit, are astounding. Because all the insane were housed under one roof they were looked upon as belonging to the same category, no account being taken of the fact that progressive paralysis and other intoxications cannot be compared with the endogenous insanities.

Still another error lay in the acceptance of the popular opinion that all who do not come under medical treatment are normal. Furthermore, no one gives a clear idea of what is meant by degeneration. As I understand the term, it should cover deviations from the normal type which may harm the descendants.

Endogenous abnormalities are those dependent upon a congenital basis, present before birth or developing later, idiopathically or from exciting causes. Endogenous refers to the past—to the cause. Almost all endogenous deviations from the normal are degenerations, but the latter term includes all exogenous disorders, for example, chronic alcoholism. Hereditary abnormalities have a more limited meaning, as we can inherit only what has been present before the union of parental protoplasm. Civilization in general makes us sickly and one-sided. Our clothes, for instance, are responsible for much. Only the brain has not suffered, or at least only in certain directions. Civilized man is a mental animal (*Gehirnmensch*), and under unfavorable circumstances one can live and be useful only through his mental abilities.

Myopia is a special evil of civilization. There is no doubt that the schools increase the number of active myopics; of course they do not create the condition but only develop it. Though no opinion as to the brain can be gathered from the form of the eye, that of the ear and of other parts of the body will sometimes give us valuable information.

When we find a malformation, we have a degeneration; if there are many, there is much degeneration; even a single stigma shows the existence of a degeneration. This is indisputable, provided only that by degeneration we do not always understand a defect of the brain, and only regard these stigmata as indications. Their significance, however, is difficult to determine. If five or more stigmata are present, we undoubtedly have to deal with an abnormal brain. From one or two we are not justified in drawing absolute conclusions, although such a condition may not be improbable. The assertion that we find signs of degeneration in a normal individual must be negated. We do not yet know what a normal individual is, scientifically speaking. Ordinarily we judge from demeanor, bearing, facial expression, etc. Science calls attention to the head, ear, buccal cavity, and to the internal organs, accessible only after death. Again the laity judges instinctively; the scientific man desires to know the "why." But both have a common ground in the study of physiognomy. In this connection first impressions are the best; an observant person judges instinctively at sight; he uses a kind of mysterious knowledge, which is rendered more reliable and increased by observation. Even those who consider a physiognomonic decision to be inadmissible must agree that all take advantage of it and it would be nonsense to discredit theoretically that which all use in practice. We must, however, distinguish between a psychologic and an esthetic decision. Everyone forms an opinion as to whether a person is handsome or ugly. Though normal and handsome are not the same, normality is the basis of beauty. Ugliness might be considered the most important

stigma of degeneration. It is the most potent anaphrodisiac. Ugliness, however, does not give us any idea with respect to the degree and kind of abnormality which may exist in the brain. It is only a sign of degeneration in the sense given above. Physiognomonic decisions refer primarily to normal characteristics. An almost normal face is a riddle to us, unless we form conclusions from the eyes and play of the features. Ugly faces, on the contrary, can be judged with almost absolute certainty. We should not speak constantly of an "honest face" unless there was such a thing. But inasmuch as the majority of mankind are indifferent to morality, only the few reveal anything to us by their faces.

The form of the head gives us more definite information. The questions raised before concern us here also. The size of the head is important, especially when below normal. Asymmetry must be pronounced before it can be taken to mean anything. Few heads are symmetrical; mental labor conduces to over-development of the left brain and of the muscles of the right side. Abnormalities on both sides always imply degeneration, but a normal form does not exclude its existence. Very important criteria of brain degeneration are abnormalities of the ears as well as those of the jaw, palate, teeth, skin, hands, feet and sexual apparatus. The want of symmetry between the organ or limb and its fellow is as important as is the malformation of a given part.

With Magnan we must distinguish the primary mental conditions, the basal forms, from the secondary conditions—the "syndromes"—which develop from the first and are known as forms of alienation. Medically speaking, the syndromes are the more important; from a humanitarian standpoint, they must be regarded as secondary. The basal conditions of degenerates are lack of stability, loss of harmonic action, loss of poise. An abnormal mental condition must precede the onset of a syndrome. The syndromes are the known forms of the endogenous mental disorders; intermittent insanity with its subforms, paranoia, melancholia, hypochondriasis, obsessions, phobias, hysteria, neurasthenia, etc. These mental disorders occur, because the patient is degenerated. They are epiphenomena—secondary manifestations. Their onset depends upon the primary conditions and upon the accomplishments of the individual life.

To understand this, we must start with a proper psychology. In ordinary life we find better conceptions than in the schools. The "people" in judging a man, do not ask whether he associates ideas slowly or rapidly, but whether he is kind, generous, or the reverse. They know that not only is character the basis of a man, but also that his character is not a unit and that his individual characteristics are to a certain extent independent of each other. The theorist can do as he likes—we are dealing with the civilized man and must take him as he is. A man is characterized by what he wants, by what he desires instinctively and earnestly. We must judge him by his desires, not by any single desire. The life history is more important than our objective examinations. The mental portrait which we must make of each individual de-

pende not only on the basal qualities characteristic of man in general and upon the anatomy of his brain but also upon the combination of qualities which gives this man his individuality. If there is a pronounced plus or minus of qualities or characteristics that man is atypical.

Of late years two subjects have occupied much attention. The first deals with criminals. Beyond doubt there exists a class of "born criminals," all of whom are not in the jails and penitentiaries. The chief defects of this class are heartlessness and carelessness, combined with some quality or qualities which places each individual in a definite class. Cruelty and force are needed to make the murderer. If carelessness is not present and if the other mental faculties are well developed, notwithstanding the heartlessness and force, we have high officials, generals, statesmen, etc., instead of convicts. Both classes are characterized by pronounced egotism, but the legal criminal stands low in the intellectual scale, notwithstanding his cunning. He is not only careless but also ignorant. I cannot, however, agree with those who claim that imbecility always accompanies moral defects. The assertion that the latter are always caused by imbecility is preposterous. That "the normal concepts are the product of a complicated associative act" is not true.

But even although we look upon criminals as defectives, we none the less hold them to be amenable to the laws. They must be treated as sick people and still must be punished. They must be protected from such causes as are exciters of crime—alcohol, want, laziness and the rest—and at the same time be punished. Only a small proportion of degenerates are unrestrained by the fear of punishment. And the wrong act must be followed by punishment, because laws without penalties would be ridiculous. The spirit in which the enactment of the latter is conceived is of importance. Of course, if punishment is regarded as the taking of revenge for wrong-doing or as a counter-offence its aim will be perverted; but if it be looked upon as a necessary evil for the repression of improper pursuits and for the protection of society, we shall have firmness without cruelty and a relative degree of good will be secured.

Just as degeneration leads to a loss of harmony of the mental faculties, leading to the development of criminals, so does the undue development of certain faculties lead to a disturbance of harmony which can be regarded as a gain. Observation goes to show that heroes or geniuses are very often abnormal. They present defects, and with many of them syndromes are present, revealing an abnormal basal condition.

Looking over the entire subject, we see that to diagnose a degeneration is a small matter; we must be able to assign each to a definite class depending upon individuality and personality.

Elementary Variations of Consciousness.—Every exogenous or endogenous impression, which persists for a certain time, alters during that time, even although the object of the impression may remain the same; in other words, the same object acts in consecutive moments in different

ways upon our consciousness. The experiments and observations of Helmholtz, Münsterberg, Urbanowitsch, Lange, Lehmann, and V. Voss have aided considerably in estimating the significance of these changes.

Fatigue is a constant factor in mental action; its effects are also measurable, but differ from the variations of psychic activity. Fatigue causes a more or less regular but constant decrease of the curve which may be used to represent psychic force, although it does not evoke variations. We can assume that the alterations in the action of the nervous centers, pulse and respiration, dependent upon the circulation of the blood and lymph, play an important part in this connection. The relationships between consciousness and the external world are subject to constant variations. There is not only no parallelism between changes going on in the external world and the alterations in our consciousness, but consciousness itself is subject to moments of fatigue and vibrates between tonicity and relaxation, so that even in normal life we cannot speak of a continuity of consciousness.

2. *Habit, fatigue, inclination, distraction.*—The use of the ergograph in the study of voluntary muscular activity, and of the "Method of continued work" in the examination of the elementary psychic processes, has brought to light very remarkable phenomena and has furnished acceptable explanations of the course of psychic action. In this work the schools of Mosso and of Kraepelin have been particularly prominent.

Habits play an important part in psychology. Habit is the result of training; repetition of impressions results in greater ease in their enactment. Habit increases the value of the products of psychic life, while at the same time as it lessens our recognition of any exertion accompanying it. Fatigue increases exertion and decreases the actual amount of psychic work accomplished. Ergographic observations show that every individual becomes fatigued in a way peculiar to himself and has his own way of feeling fatigue. Notwithstanding this, excessive exercise diminishes sensation and motion. The duration and intensity of work acts upon the whole system, tiring out organs which have not been directly used. So far as nutritive changes are concerned, the quantity of the work is more important than the quality. Exhaustion injures the quality of perceptions more than the quantity of their content. The retention of new impressions depends to a great extent upon general mental and physical conditions.

We often notice that an individual at first is disinclined to do a given piece of work, but after once starting he proceeds to perform it with greater facility; he must work into it, so to speak, like a locomotive, reaching the maximum not at the commencement but only after a certain time. Short periods of rest of five minutes or so, in the course of the work act favorably; but if the interruption is of fifteen minutes' duration, the curve is apt to sink when work is resumed. This is due to loss of "inclination" which has kept up the strength for work, until conquered by exhaustion. We often see in the curve an initial or terminal rise which results from this inclination for or interest in the work. Subjectively the same is noticed.

All laws of attention (or of distraction) are dependent upon the two fundamental ones concerned with the strength of external stimuli and of interest excited. Each has its personal coefficient of distraction, and the qualitative and quantitative variations in attention not only vary in different individuals but also in the same person.

A stimulus which normally distracts may occasionally have just the opposite action, so that, instead of slowing or inhibiting specific activity, it will increase it. The same stimulus varies in its action, differing in individuals and even affecting the same individual differently at different times.

3. *The Emotions.*—The psyche is in direct connection with the emotions, in indirect connection with ideas. The psychic curve from impression to expression passes through the sphere of sensation and feeling. Intellectual concepts influence expression in so far as they are capable of exciting corresponding movements of emotion and sensation; the task of the intellect consists in the construction of motives. The expression of emotions is accompanied by alterations in the circulation, by chemical changes in the tissue, by variations of the nervous conductivity for sensation and emotion. Man possesses six basal feelings: desire, distaste, excitability, inhibition, tension, relaxation. The old teaching, which limited all forms and kinds of feeling to the degrees of pain and desire, can no longer be retained. The six basal forms of feeling correspond to six different complexes of physical alteration, which till now have been only partly studied. The number of the emotions which can occur from combinations of these six basal forms according to the degree, number and kind of the external and internal stimuli is infinite. Happiness, for instance, is an emotion upon which much of our psychic activity depends. Expectation is one which produces great variability in psychic activity. Another large group of functions is the sympathetic, in which sympathy and antipathy are the basal types. A third group, characterized by slight variations in psychic work, is poor in expression. These emotions may be styled "universal," and are intellectual, moral or esthetic. With some individuals, however, "science, morality and art" may evoke very pronounced emotions, a sort of ecstasy, unknown to the masses.

Diet and Nervous Life.—Marked variations in psychic force are closely connected with the ingestion of food. We find increased activity before, delayed activity after, a meal. In order to influence the relationship between digestion and mental activity, that is, to counteract the sleepiness and listlessness which follow a meal, we are accustomed to use stimulants. Coffee, tea and cocoa, tobacco and opium, and the various alcoholic drinks belong to the three groups of substances which man uses on account of their action upon the nervous system. The psychic activity produced by the first varies according to the quantity, quality, time of day, etc. Coffee increases motor and sensory excitability, eases the labor incident to idea-association and excites the imagination. Tea exerts a somewhat similar effect, but in a slower and quieter manner. Tobacco acts directly upon the stomach and intestines and often serves as a regulator of defecation. Alcohol has a definite nutritive value, and acts upon

the digestive organs, liver and circulation. Psychically, alcohol acts somewhat in the same way as exhaustion, impairing the judgment, the normal ability for receiving impressions of external objects and the differentiation of concepts. It excites and then paralyzes voluntary movement.

The number of large and small variations which crowd upon one another, forming a summation or neutralizing each other is so great that the curve of the psychic daily life is very complicated. Without going into details, it can readily be seen that a person's daily psychic life cannot be stable, but is subject to variations dependent upon innumerable factors. We come next to the larger periods, which constitute the "daily cycle of consciousness." In the nourishment of the nervous system we find compensation with destruction going on together. In the daily periods of psychic life these two conditions reach their maximum in wakefulness and in sleep.

Sleep and Waking.—If we were to describe a condition characterized by decreased temperature, slowed pulse and respiration, eyeballs rolled upwards, small and fixed pupils, accompanied by weariness and relaxation, heavy eyelids, and clouded or absent consciousness, it would seem as if we were speaking of a pathologic condition. But all these features belong to sleep, which is a physiologic state.

No hard and fast line between sleep and waking can be drawn, but it has been found possible to establish a curve of psychic action for the former as well as for the latter. External impressions which are received and worked over unconsciously, but are not perceived, may give rise to concepts which have nothing in common with the reality. Thus in light sleep we have visions, whereas, if the slumber is deep, either the external impressions act as such, or they excite those conditions of sleep-consciousness which we call dreams. External impressions are not necessary, inasmuch as the cerebral circulation or the general chemical relations of the organism may themselves excite centers, awaken memory pictures, and group them in unfamiliar ways. The strangest thing in connection with dreams is the want of harmony between the concept and the sensation evoked by it. The alteration in the time of consciousness is also remarkable.

The period of awakening may be abrupt or slow; it may be accompanied by depression or by cheerfulness. Nutritive changes, alcoholism, etc., are among the causes of these variations.

6. *Climatic Influences.*—Temperature, humidity, atmospheric pressure and electricity are active forces in influencing our psychic life. Not only do every season and every climate influence certain diseases, but even healthy individuals react differently to climatic influences. The same individual in different moments of his life, from the varying effects of atmosphere and season, may feel and act like a Tunisian, a Norwegian, a Brazilian and a Hollander.

7. *Environmental Influences.*—Personal individuality becomes lost in crowds; the person becomes only a small part of a much larger and more developed organization; consciousness of his ego disappears and becomes

a part of a new ego, a group-ego. The psychology of the groupings of mankind is not so fine or complete as that of the individual. We obey the will of the majority; lose our ability for self-criticism and say and do things which we wonder at when alone. Time also is a factor. Impressions of childhood, if awakened in more mature years, may have an effect upon our whole life. Criminals are largely influenced by their surroundings; many epidemics of suicide are due to suggestion. The contents of many hallucinations, delusions, or fixed ideas can often be referred to some relationship between the individual and his surroundings. Politics, war and revolution evoke pronounced variations.

8. *Age*.—The infant, unable as yet to speak, lives a psychic reflex life. The ego-consciousness is a phenomenon of memory. During the first few years of life external sensorial sensations and the muscular sense are the active forces, just as they always remain in wild beings and idiots. The sensory emotions of a child are simple, reflex, direct, variable and unmotivated. Material momentary interests may produce such a pronounced effect upon him that he begins to resemble a real criminal. The natural and supernatural are still unseparated, since the child is not capable of reasoning inductively.

The next period embraces the school age. The individual character is never completed in these years, but with many it reveals itself clearly. With others, the personal character is apparent only after the onset of puberty.

The important age comes next. Association with his fellow-men reveals to him his relationship with his kind. Sexual development brings him near to completion, as this is the expression of the whole purpose of existence. When thirty years old, the man is formed and represents the type of descent, family and epoch; the woman shows this from the 20th to the 40th year. The mature man keeps himself more apart than the youngster; he has accumulated much and has formed views which are probably the justification of his own inclinations and habits. As strength and energy decline, the obligations to his fellows sit more lightly upon him, and egoism, in the shape of selfishness, covetousness, avarice and pessimism may assume sway. Later on comes the desire for quiet and the adherence to the past. A perfectly healthy old man is uncommon, but age in itself is not something pathologic—a degeneration, or a dementia. We find a slowing of psychic and psychomotor activity, but only when organic signs of old age come on; when previous misuse of alcohol, tobacco, etc., and the results of syphilis, rheumatism, etc., are joined to physiologic retrogression, is it admissible to speak of old age as a degeneration. This form may come on as early as the fourth decade.

Every period of life predisposes to some forms of mental disease, especially puberty and, in the female, the menopause.

We have alterations in the ego-consciousness as well as in the body-consciousness. These are due to biologic causes; the corresponding variations are the effects of several factors: the functions of the individual, the ripening of the individual and the maintenance of the species.

Book Reviews

The Science of Penology; The defence of Society against Crime. Collated and systematized by HENRY M. BOIES, member of the Board of Public Charities and of the Committee of Lunacy of the State of Pennsylvania, author of *Prisoners and Paupers*. (G. P. Putnam's Sons, New York and London. The Knickerbocker Press, 1901.)

The object of the above work is to collect upon a consistent theory and in a systematic way as a defense of society against crime the various important discoveries in penology—in other words, as the title indicates, to formulate the Science of Penology. This science we are told "is the science of the protection of society from crime by the repression, reformation and extirpation of criminals" and again in a succeeding sentence we are informed that "it is the discovery, formulation and explanation of the immutable laws which govern and regulate successful action for the defense of society against criminality." It seems at first thought doubtful whether or not in the treatment of the criminal classes we have yet reached definite and immutable principles or practices which are capable of being formulated into fundamental laws. Our dealings with criminality thus far seem to have been rather tentative and experimental. The idea of punishment—"an eye for an eye and a tooth for a tooth"—has been predominant and has governed legislation and practice from the earliest ages until the present. It is true, that within the past quarter of a century and largely through the initiative of Mr. Z. R. Brockway, of Elmira, a theory more in harmony with modern thought and a more enlightened practice has been proclaimed, but it is confessedly too early to speak of these experiments as demonstrating the existence of immutable laws. Doubtless logic and reason are in favor of the view that all punishment should look to the reformation of the offender, but we are not yet justified in asserting that the methods proposed are the best or will exist a hundred years hence. In these matters, as yet, we are not so much in the domain of natural fixed laws as in the field of theory and speculation. In theory it is probable that the new way is the better way, but whether or not it will better protect society can only be told by actual trial. Hence it is premature to announce that ultimate laws and final principles have been established.

The book, although somewhat overburdened by learning and needlessly complicated by an apparent effort to be philosophical, is valuable and suggestive. Some of the principles enunciated have an epigrammatic force and terseness which will commend them to all lovers of pithy sayings. Excellent examples of these phrases are: "Punishment must

be fitted to the criminal rather than to the crime." "The proper object of legal penalties is to secure obedience to the law." "The soul of all improvement is improvement of the soul."

In the discussion of general topics there is sometimes a confusion of metaphor and speculative suggestion which is much to be deprecated. Thus criminality is spoken of as a disease as specific as small-pox, cholera and yellow fever, to be scientifically investigated and destroyed by appropriate remedies or obviated by prophylaxis. This surely cannot be demonstrated. Criminality does not, like small-pox, cholera or yellow fever, owe its origin to a specific cause, nor is it communicated by infection, nor like them does it run a uniform and definite course. If it is a disease, what are its laws, its course and its termination? Has any one up to this time given any definite data upon these very essential points?

The book is much stronger where it deals with statistics and well-ascertained facts. There are excellent chapters on the "Detection and Identification of Criminals," on the "Indeterminate Sentence" on the "Reformation of Criminals" and on "Juvenile and First Offenders."

The book deserves a wide sale and careful study at the hands of all thoughtful persons. It is attractively printed, with good paper, clear type and ample margins.

Epilepsy and other Chronic Convulsive Diseases: Their Causes, Symptoms and Treatment. By Sir WILLIAM R. GOWERS, M. D., F. R. C. P., F. R. S., Consulting Physician to University College Hospital, etc., etc. Second edition. (Philadelphia, P. Blakiston's Sons & Co., 1012 Walnut St., 1901.)

The first edition of this work was published twenty years ago; in the present edition, although the general character of the book has been maintained, every sentence, we are assured, has been revised, numerous additions have been made and many parts have been rewritten. The number of cases which formed the statistical basis of the book has also been more than doubled.

To those who have been familiar with the original edition, it is needless to commend the present new and vastly improved book.

It is difficult to go into detail in the notice of a book of such uniform interest, where every page will suggest a quotation. It is interesting to note, however, how valuable the results of the statistical method have proved and to what an extent the positions taken in the first edition have been confirmed by the additional cases available for the present edition. It is interesting to note that the author does not accept Haig's theory of the relation of the uric acid diathesis to epilepsy, but regards the facts presented by him as suggestive rather than conclusive.

The author emphasizes his belief that epilepsy is essentially due to an inherited tendency to convulsive seizures rather than to simple failure of nutrition. We do not remember to have seen in any other work such a sweeping statement of this truth which has forced itself upon the attention of all who have had to do with chronic epileptics.

The chapter on the treatment of epilepsy is somewhat depressing from the author's concession of the practical failure of medicinal, dietetic and surgical procedures. Among drugs the bromides, in his opinion, still hold the first place. We are interested to perceive that he has found no special choice between the bromide of potassium and the bromides of sodium, ammonium or strontium. He believes that in the administration of the bromides an effort should be made to find the dose which will be borne persistently and continuously by the patient. He recommends of course the continuous administration of the drug as affording the only hope (often a faint one) of ultimate cure. We can hardly subscribe to his opinion that the persistent administration of the bromides does no permanent harm to the nervous system. Those officers of institutions for the insane who have seen patients brought to them at the point of death in consequence of heavy drugging with these remedies, will certainly share our doubts of the harmlessness of the preparations in question. The book is a store-house of accurate and careful observation, and for the use of the alienist has no equal in the English language.

Mental Diseases and their Modern Treatment. By SELDEN HARRIS TALCOTT, A. M., M. D., Ph. D., Medical Superintendent of the Middletown State Homeopathic Hospital, etc. (New York: Boericke and Runyon Company, 1901).

Books privately printed for the eyes of indulgent friends have very properly never been considered legitimate objects of literary criticism. Clinical lectures delivered *ore rotundo* to medical students might be similarly classed for the reason that the lecturer surrounded by enthusiastic and sympathetic pupils is frequently betrayed into an extravagance of statement and fervor of expression hardly compatible with a purely scientific presentation of the topic. It seems in a way harsh to judge the present book by the ordinary canons of criticism because it was originally prepared for the instruction of students in a homeopathic medical school in the homeopathic treatment of mental diseases. The audience being thoroughly in sympathy with the lecturer and already convinced of the truth of his message it is but natural that the lecturer should speak as one might in the privacy of his own home.

This little volume of three hundred and fifty pages we are told is designed to be "not an exhaustive treatise upon insanity. It consists simply of a few blaze-marks guiding the way through the wilderness of mental disorder into the sunny fields of health." The style as has been intimated, is that of the public lecturer or platform speaker rather than of the quiet author or medical writer. The descriptions of diseases are, however, interesting and graphic, albeit often characterized by an exuberance of diction and freedom of expression, somewhat startling. The following from page 18 may serve as an example: "The action of the brain in its relation to the body may be illustrated by comparing it to the action of the spider in relation to its web. This

famous animal is usually found at home in the most central portion of its self-constructed domicile. It may be apparently asleep, but if you touch ever so lightly one of the filaments of the spider's web he instantly takes notice of the fact and seeks to repair the injuries which have been wrought. So the brain stands like a sleepless Cerberus in the centre of the much-diverging nerve fabric and if you prick a nerve extremity the shock is vibrated with lightning-like rapidity to the brain and from it goes forth the order to the muscular guardians of the injured part to hold the fort or to beat a retreat as may seem best. A good illustration of nerve action is when a boy sits down upon a bent pin and then gets up again."

A further example from page 125 on the pathological states of melancholia also merits repetition: "In studying the pathology of melancholia you will often find diseased conditions of the abdominal viscera and to such conditions may often be attributed much of the mental diseases which have invaded the life of the individual thus afflicted. In the brain itself we often find but slight evidences of disease even when the patient has died in his unfortunate and depressed state. But even slight pathological developments in the brain will sometimes reveal the fact that its mental occupant was overborne in a most destructive way by forbidden and abhorrent forces, until it finally gave up the contest against the slings and arrows of outrageous fortune.

"The track of a vessel as it disturbs the surface of the ocean is speedily washed away. The casual observer sees upon the sunlit billows nothing to proclaim the fact that a steamship has ploughed through these obliterating waves. But the keen-eyed and long-experienced mariner discovers upon the tell-tale waters, oil from the machinery and ashes from the pit and a bit of sable ribbon torn by the winds from a black flag, and he knows from these that a stranger and a pirate has passed that way. So the phantom bark of melancholia may sweep along the sinuses and glide up and down the arterial courses, vexing the shores of the cerebral convolutions, yet leaving but little track or trace by which its ravages may be noted or measured. Yet skilled investigators profiting by repeated observations are fast discovering and marking out with faithful hands and by unmistakable signs, the course and the character of this unseen but deadly enemy of mental health." This verily seems like the method of Zadig applied to cerebral pathology and is picturesque even if not altogether scientific or convincing.

The chapter on the general treatment of insanity contains much practical good sense and is to be commended heartily. Rest in bed with enforced protection, exercise, amusement and occupation, artificial feeding, general dietetics and hygiene are all very sensibly and satisfactorily dwelt upon in a manner to impress the student and practitioner.

The medical treatment of insanity on the other hand can hardly be considered seriously and in reading one finds difficulty in maintaining the gravity which such a topic would seem to demand. Take for example the following from page 234 and following pages: "For acute

melancholia where the victim is prostrated by shock, where the grief is intensely profound, where the power of weeping and thus securing relief has been abolished, there we find Ignatia Amara the relieving remedy. Probably no drug has produced more comforting results in the realms of sorrow and loss than the St. Ignatius bean. The Ignatia patient wants to be let alone, and is yet sensitive about what she conceives to be the neglect of her friends. For brooding sorrow following hard luck or bad news, give Ignatia. For the over-mastering effect of good news which impels some women into the hysteric state give coffee. While the Ignatia patient generally broods, she sometimes becomes hysterical and indulges in temporary fits of laughter. The natrum Muriaticum patients instead of brooding over their troubles or crying inwardly (Ignatia), bubble and boil and shed tears copiously like the old prince and king over their alleged dead brother as described in Huckleberry Finn.

"Among the cry-baby remedies we have Pulsatilla, Nux Moschata and Cactus. The Pulsatilla patient weeps easily, but smiles through her tears and is very changeable. The mental state of Pulsatilla is like the weather in April, now you see the brilliant radiance of the summer's sun as it glints down from cerulean-lined heavens; and again you see gray skies or feel the trickling tears of the clouds. . . . Tarantula is a remedy for crafty, cunning maniacs—patients who are full of mischief and prone to sudden fits of destructiveness, such as knocking down pictures, or sweeping bric-a-brac from a mantel-piece or pounding a piano or a helpless child. . . . Calcarea Phosphoricum, if there seems to be a tendency to cerebral chilblain, and phosphoric acid when the patients are dull and drowsy, with occasional periods of excitement and profuse discharge of urine." We are later informed that "Alcohol produces artificial and temporary paresis and is therefore homeopathic to the genuine article" and that it may be administered in small doses sometimes with benefit. Good whiskey, therefore, in one-half ounce doses may be given once in three or four hours when necessary. We are, however, warned that this and other remedies mentioned (nitric acid, iodide of potash, Veratrum Viride, Cuprum Metallicum, etc.), have thus far not proved curative but have sometimes afforded relief and have seemed to effect a prolongation of life and an increased comfort to the sick one. These are fair specimens of the therapeutic suggestions contained in about a dozen similar pages of the book.

A compendium of the remedies used homeopathically for the treatment of mental disorders concludes the volume. This, whatever may be thought by the individual of the value of the therapeutics thus suggested, is alphabetically and systematically presented. The general action of the drug is first mentioned and, subsequently in order, its action upon the brain and spinal cord and upon the mind; its relation to sleep and finally its special sphere of action.

To those who desire to familiarize themselves with the methods of homeopathy in the treatment of insanity and the claims of its advocates

the book may be commended. It is the work of one who believes in the system and who has had much experience in the treatment of mental disorders. To the general student of psychiatry the book has no great value.

Laboratory Work in Histology. By G. CARL HUBER, M. D., Junior Professor of Anatomy and Director of the Histological Laboratory, University of Michigan. Third edition, revised and enlarged. (Ann Arbor, Michigan: George Wahr, Publisher, 1900.)

This book is intended as a guide to the student in his laboratory work. It is not supposed to replace the text-books but merely to supplement them.

Part I of about sixty pages is devoted to "microscopic technic." The most valuable methods of technic commonly employed are clearly described.

Part II of about one hundred and twenty pages contains the "Outlines for laboratory work" and numerous blank pages, a few at the end of each section for the student's drawings of his preparations.

The laboratory work begins with a study of simple cells, plant and animal, and of cell division. The study of the tissue elements, epithelium, connective tissue, muscles, nerve, blood and lymph then follows and precedes the study of the more complex organs which are taken up in the following order: circulatory and lymphatic systems, alimentary tract, respiratory organs, urinary, and reproductive systems, skin, central nervous system, and special senses. The space devoted to the central nervous system is very brief. No study is made of the medulla. It is evident that more work on the central nervous system is given in another course. The course thus outlined and given by the author at the University of Michigan is a very excellent one. The plan is logical and for the most part in good proportion. The order in which the work is given is somewhat similar to that in other outlines, as Benda and Guenther's, Barker and Bardeen's, Stirling's, and Waldeyer's. In Benda and Guenther's illustration and space for drawing are emphasized. In Stirling's outlines the various methods for tissue study are especially valuable. Barker and Bardeen's, and Waldeyer's outlines give but little more than a list of the objects studied in their respective courses.

Teachers of histology will find Huber's outlines of considerable value in starting new courses and in rearranging old ones, especially where short courses are to be lengthened. The difficulty in outlining a well balanced course is not inconsiderable.

Such books, giving as they do a clear insight into courses given in other institutions, are especially welcome in this formative period of medical teaching. We should be interested in looking over outlines of courses given elsewhere. The adoption by other teachers for their classes of this outline will probably be infrequent, as ideas of teaching differ so much among teachers and even from year to year with the

same individual. Then, too, other conditions vary greatly, as the time devoted to the work by the student and also his previous preparation.

We can recommend Dr. Huber's outlines to all teachers of histology, and especially to those who wish to profit from a very successful thorough course that has been given for several years and carefully tested as shown by the fact that the present is the third edition of this book.

WARREN H. LEWIS.

Half-Yearly Summary

The report of the destruction by fire of a large State institution in Nebraska, which is fully given in the SUMMARY, will attract the attention of readers of this issue. The accident is not without its lesson, as is always true of fires, but in this case the lesson is one which should have been impressed by similar conditions several years ago when the then new "Group Three" at the St. Lawrence State Hospital was burned. In both conflagrations the water pressure was reduced by the breaking of a main in the burning building, so that all of the pumping power available could not throw a stream more than a few feet. In the reconstruction of the group at Ogdensburg, a repetition of this calamity was provided against by a complete independent circuit of outside water service. In the event of fire, the supply of water to the buildings can be shut off from the outside, and dependence will be placed upon a protected and uninjured service. The importance of interior stand-pipes is recognized in dealing with an incipient blaze, but the long record of institution fires shows the practically universal rule that measures for fire protection installed in the building itself are unreliable, and yield a false sense of security.

The officers of the Nebraska institution are to be congratulated upon the discipline and order which prevented great loss of life. From the reports accessible to the JOURNAL it is shown that two persons only were fatally burned, and they were both demented patients who returned to the buildings from which they had been, in one instance twice, removed.

Provision was promptly made for the housing of the patients, and it appears that only temporary inconvenience will result.

CONNECTICUT.—*Retreat for the Insane, Hartford.*—In his last annual report, issued in April, 1901, Dr. Stearns makes the following statement with reference to changes in the character of symptoms of insanity: "I have been under the impression for several years that the character

of symptoms presented by our patients, especially by those of an acute character, has become changed in some degree: that formerly there were more cases presenting conditions of excitement than of depression. As the experience of an institution in this respect during only a short period would be of little value in determining such a question, I have made an examination of our statistics covering several years.

"I find that from 1869 to 1884 inclusive there were admitted eight hundred and two cases which were classified under the term of mania; and during the same period only three hundred and ninety-eight cases under the term of melancholia; that is, more than twice as many presenting symptoms of excitement as of those with depression. From 1885 to 1894 the numbers were more equally divided. There were of mania two hundred and fifty-five; and of melancholia two hundred and three. During the last seven years the change has been greater still, the number of cases characterized by depression being the largest, numbering one hundred and fifty, and those with excitement only one hundred and twenty-seven.

"It may be further stated that in the cases characterized by excitement it has been of a less pronounced nature than formerly.

"As these statements relate only the experience of a small institution, they may not go far in determining the question raised, but as they cover a considerable period of time they may be of interest.

"Pointing in a similar direction, it may further be stated that during the last eleven years not more than three or four of the forty-one cases of general paresis received have presented the typical symptoms characteristic of that form of disease with which we were so familiar twenty or thirty years ago. The extravagance of delusions, which was then so common, seems to have become much modified in recent years."

INDIANA.—*Central Indiana Hospital for the Insane, Indianapolis.*—The Hospital for the "Sick Insane" is nearing completion. The cost of this building, exclusive of equipment, will be \$110,000, and its capacity 100 patients. The new congregate dining rooms, three in number, have been completed and are now occupied. The total cost was \$49,000 and the capacity 1200. A cold storage plant, at a cost of \$15,000, is now being erected. The minor improvements have been many.

The past year in the new department of pathology has been one mainly of instruction and organization. The primary object has been to give the assistant physicians direction in their work and to afford them the opportunity for the study of their cases from all sides. With this end in view the following courses of instruction have been given. Each morning for two hours three members of the house staff, in turn, are engaged in pathological study at the laboratory. In these classes each member is given, after studying, drawing and describing a normal histological specimen of a given organ, a pathological specimen of the same organ, and without knowing the nature of the pathological change writes out a description and makes a drawing of those parts in which

he finds it differs from the normal specimen. The work so far is wholly objective and individual, and when accomplished, the pathologist goes over the specimen with him, and if he has not arrived at a diagnosis helps him to accomplish this result. This having been done, the physician then constructs from his mind the gross appearance of the organ so affected and then works out a scheme of the clinical evidence which such a pathological condition would give during life. It will be seen that the process of reasoning in the diagnosis of the specimen is the same as that employed in the diagnosis of diseases, but in the further deductions, instead of arriving at the pathological change as he does in the wards from the clinical evidence, he here starts with the pathological evidence and works out the clinical symptoms. The teaching is wholly inductive, and the object of this and all other work in the pathological department, is to enable the physicians to study their cases thoroughly, both clinically and pathologically, and to prepare them to study their cases, *post mortem*, after having studied them carefully during life.

Carrying out this project further, two series of weekly evening classes have been held; first a practical class on the normal anatomical relations of the organs of the body at which the physicians have mapped out the different organs by inspection, palpation, percussion, etc.; second, a class on the finer anatomy of the nervous system. To this latter class, the physicians of the city were invited also. Starting with the development of the neurone concept and the work which led up to it, and later the application of the neurone concept to the study of the peripheral and sensory nervous systems, these were themselves studied by tracing, first, each sensory neurone system, peripheral and special, to its primary, secondary, and final end-stations; and second, by tracing each motor neurone system from its central origin to its peripheral ending; third, the association tracts. These demonstrations were greatly aided by laboratory specimens and by the excellent models with which this is provided.

Bacteriological studies were made upon a series of cases of diarrhoea which occurred during the year, and examinations of the fresh blood of cases of acute melancholia and mania have been made, the results of which will be published later.

After an examination of the American, English, Scottish and German asylum records, a system of autopsy records has been established for this hospital under the following headings: Clinical Notes, External Examinations, Locomotory System, Circulatory System, Respiratory System, Alimentary System, Uro-generative System, Blood-glandular System, and Nervous System; then Microscopical Examination, Bacteriological Report and Pathological Diagnosis. The endeavor has been to make the reports as complete as possible.

The autopsies are of interest, not only in their relation to the clinical report which the physician presents at each case, but also have been made of use in confirming the anatomical studies in which the physicians

have been engaged in their classes. Up to the present date there have been thirty-two held this year. Physicians and students from the city were in attendance.

The morning hours of the physicians have been utilized, when necessary, in the clinical pathological work, such as the examination of sputa, urine and blood, etc. The museum of the laboratory is becoming one of its special features with the mounting and arrangements of its gross specimens into groups for better advantages in teaching.

The library for reference purposes at this department contains over seven hundred volumes, thus providing the literature for research work upon the part of every member of the hospital staff; over twenty of the leading medical and scientific journals of this country and Europe are also provided for the use of the physicians.

The most gratifying feature of this year's work has been the success attending the efforts of the medical colleges of Indianapolis to present to their classes clinical lectures upon diseases of the mind and nervous system. Each school held during the past year one lecture and demonstration each week in the amphitheater of the laboratory lasting two hours, the assistant physicians of the institution alternating in providing the cases and histories for each clinic. At the close of the lecture there was given each day by Dr. Wm. Charles White, the pathologist of this hospital, a pathological demonstration, either from an autopsy, from the gross specimens of a recent autopsy, or from the museum specimens. These lectures and demonstrations will be continued. The clinics were attended not only by the students of the various colleges, but by many practitioners. Special workers have been taken into the laboratory also, and during the coming year it is hoped that their number will be added to and that the laboratory will continue to encourage and stimulate to greater effort in scientific work, not only the physicians connected with the staff, but also those teachers and practitioners who interest themselves in this department.

The work is yet in embryo but is undoubtedly along the proper lines, i. e., the association of the clinical with the pathological study. The outlook for the future is most encouraging. The new hospital with its complete facilities and equipment for conducting examinations, its full records and histories will be of great benefit to this department.

IOWA.—*Iowa Hospital for the Insane.*—Since the last issue of the JOURNAL OF INSANITY Dr. Chas. H. Applegate, first assistant physician at the hospital for insane at Clarinda, Iowa, has been elected superintendent of the hospital for insane at Mt. Pleasant, as successor to Dr. Hoyt, and has taken charge of the institution. He was first assistant physician under Dr. Hoyt at Clarinda and since his death under Dr. Witte, the present superintendent. Dr. M. Nelson Voldeng, who was assistant physician in this hospital for several years and for five years first assistant physician, and who resigned five years ago to spend one year in Germany, after which he has practiced medicine as a specialist in mental

and nervous diseases in Des Moines, the capital of this State, was one week ago elected to be superintendent of the new hospital at Cherokee, in the northwest part of Iowa. This new hospital will be opened next spring; certainly not later than the first of July. It will then have accommodations for 500 patients and will be a model institution in most respects.

MASSACHUSETTS.—*Danvers Insane Hospital, Hathorne.*—The new laundry which has been constructed for this hospital, has recently been occupied. The motor power is electricity, and the smoothing irons are heated by electric current. Electricity as applied to laundry apparatus seems perfectly satisfactory. A detached cottage for the patients employed upon the farm is being erected near the farm buildings. A small detached building, connected by a corridor, with one of the wards, is being built, the sole purpose of this building being for surgical purposes.

Considerable surgery has been done at this hospital during the past two years, and there seemed to be a sufficient field for this work here, to demand better conditions, which could only be obtained by separate structure devoted to this purpose.

—*Medfield Insane Asylum, Harding.*—A Farm House has been completed which provides for 35 patients to work on the farm, for the head farmer's family, and rooms for 14 farm employees. Its principal features are dormitories for the farm patients entirely cut off from the farmer's family, and rooms for farm employees. Attendants have rooms connecting with each dormitory. On the first floor there are a large dining room, smoking room, and sitting room with toilet rooms, rain bath and clothing rooms connected for the patients. The second floor contains the dormitories for patients, and the central part rooms for the farmer's family. The third floor which is a continuation of the central part has 14 single rooms for farm hands. The building is heated by hot water and lighted by electricity. It is situated near the stock barn, about a quarter of a mile from the administration building.

An appropriation has been secured from the State and plans have been drawn for building at once a Nurses' Home, providing for 70 women nurses. This building contains all modern improvements, with sitting rooms, bath, writing rooms, matron's rooms, diet kitchen, laundry and class rooms. It will be built south of the front line of the asylum buildings, but near enough to receive its hot water and steam supply from the central plant.

The number of patients is steadily increasing, being now 1275.

MICHIGAN.—*Oak Grove Hospital, Flint.*—There has recently been added a semi-detached building for women. It is connected by a glass enclosed corridor, sixty feet in length and in construction and location is in harmony with the original group. The first floor contains six patients' bed-rooms, each with clothes closet attached, and has in addition

a parlor, a room for tub and shower baths and massage, a drying room for household utensils, diet kitchen and refrigerator. The arrangement and situation of the bed-rooms are such as to provide complete isolation for acute cases and the application of modern methods of treatment under the most favorable conditions. The second floor is assigned to women nurses who have an alcove sitting room in common, but separate sleeping rooms. From the sitting room a door opens upon a charming veranda for use in warm weather. The building permits a more satisfactory classification of patients, facilitates the care of disturbed and restless cases, and adds materially to the comfort of those who are convalescent and quiet.

MISSOURI.—*State Hospital for Insane, No. 2, St. Joseph.*—A detached building for tuberculous women is being constructed.

NEBRASKA.—Destruction by fire of the State Hospital at Norfolk.

From the *Norfolk News* the following account of the destruction of the hospital for the insane near that city is taken. The fire occurred on the morning of September 23, 1901:

"The fire was first noticed in the tunnel which contained the steam pipes, water pipes and electric-light wires, under the middle wing on the men's side. Smoke was discovered in the ward at about 3.45 o'clock in the morning. Every effort was made to control the fire, but the water supply was soon exhausted and the impossibility of saving the building was soon apparent. When it was evident that a serious conflagration was imminent, an alarm was sounded in the city. This was at 4.30, and the response on the part of the Norfolk firemen was prompt and vigorous, but insufficiency of water supply soon rendered impossible anything more than saving furniture and movable articles.

"The roaring and force of the fire were terrific. Cinders, metal shingles and other material were carried high in the air and to a long distance from the building.

"The work of rescuing the male patients was begun early. The smoke soon became dense and the heat intense so that this was no easy task, and many became very excited, and even after removal were determined to return. Several remained in their rooms after the ordinary means of escape were cut off. One was released by cutting away the stone in which the window gratings were set. He was almost suffocated by smoke when removed and had injured himself severely against the window guards in his frantic efforts to get out. It is thought that he is so badly injured he will not recover. The officials concede that at least one male patient was burned.

"Another patient in one of the upper stories was released with no time to spare. One of the workmen on the standpipe climbed a pipe on the outside of the building and gave the patient the key to his grating, which had been attached to the end of a fishpole. The rescuer was almost suffocated with smoke and does not understand how the patient managed to keep from suffocation.

"There were 300 patients in the building, of whom 203 were men and 97 were women.

"The work in the original or center section and in the east wing, containing the women's wards, was more deliberate. The women patients were all gathered on the grounds. They were considerably excited but were well controlled by their attendants.

"After the patients were removed the work was directed toward saving the contents of the building, with very excellent results. The furniture, bedding, carpets, clothing and almost everything in the main building and east wing were carefully removed and but little was damaged.

"When it was seen that the east wing was doomed and after all the furniture had been removed, the doors and windows and screens were pried loose and carried to a place of safety. The brass fixtures to the water system were likewise saved and many of the steam radiators were removed so that the loss in the east and central portions was reduced to a minimum.

"In this work the officers and attendants were materially assisted by Norfolk firemen and town people, who were there in large numbers, and who worked with untiring energy.

"There are many opinions as to how the fire might have been stopped or prevented and several of them were tried, but were unavailing. Several mistakes in construction were found. There was no fire wall in the building and the fire worked along the entire length of roof. A fire wall or two extended to the roof might have stayed the fire without the use of a pint of water, as it burned very slowly, working eastly against the wind. There was no way of shutting off the water, which wasted away after the pipes entering the building had burned off.

"The building burned was all of brick with stone basement, and consisted of the central structure and three wings. The main edifice was erected in 1886 and was 244 feet long with an average width of 50 feet, four stories high. It contained the officers' quarters, parlors, reception room and six wards. Two wings were erected shortly after the main building, extending north from either end, each 37 by 90 feet, and four stories high. In 1897 another wing was completed, extending west from the north end of the west wing, and this was 128 feet by 37 feet, four stories high. Figures are not available as to what the buildings cost but the estimate placed upon them by the superintendent is \$250,000. As the walls remain practically intact and much furniture was saved, as well as a large number of the interior doors and windows, the loss will probably not exceed \$75,000. There was no insurance on the building or its contents.

"In providing for the patients order was rapidly brought out of chaos. By nightfall, Dr. Teal, the superintendent of the hospital, had a place provided for every person to sleep and each was given a good comfortable bed. Some of the beds were made on the floor, but many were provided with cots and springs. The women patients were quartered in the chapel, and the men were given places in the engine house, over the

kitchen, in the barns and in the storehouse. The offices had been removed to the carpenter shop, where the desks of the superintendent, physician and bookkeeper were crowded into a small space, and where a telephone had been erected.

"On the following morning breakfast was served practically on time to employees and patients. The general dining room was utilized as far as it would accommodate the patients, and the remainder were served on the lawn.

"Eighty patients were removed to each of the State hospitals at Hastings and Lincoln, respectively, leaving 150 to be cared for in temporary quarters at Norfolk.

"An inspection of the ruins showed the walls to be in good condition. They were neither sprung nor cracked, and with the exception of the administration portion of the building, hardly a brick was missing. This favorable condition of the walls is attributable largely to the fact that very little water was thrown on them when they were hot. It is estimated that the damage to the structure will not exceed one-third what it would cost to rebuild and that the wing could be repaired at a cost not to exceed \$7000. By utilizing the chapel, power house, kitchen, laundry and storehouse, all of which are equipped with heat and electric lights, the institution will be able to accommodate 150 or more permanently, or until the whole building is put in condition to receive patients."

NEW HAMPSHIRE.—*New Hampshire State Hospital, Concord.*—By an act of the Legislature of 1901 the name of the institution was changed from the New Hampshire Asylum for the Insane to the New Hampshire State Hospital.

During the summer the following improvements have been made: A cottage for the farmer has been erected on the grounds convenient to the farm and barns. New bath rooms have been constructed in wards 13, 14 and 15. The woodwork in K1 has been renewed, and a new hard pine floor laid; steel ceiling erected, and the walls repainted. New plumbing has been installed, and several new floors have been laid in the administration building. A new fire-proof tower with iron stairway has been erected in the rear of the chapel, affording a safe exit in the case of fire, and serving also as an entrance to the rooms of the employees in the remodeled building formerly used for laundry purposes.

The first floor of this building has been fitted for a bakery by the construction of a large oven faced with white enameled brick, the laying of a slate tile floor and the erection of steel ceiling.

Arrangements have been made with the Concord District Nursing Association by which every nurse in the Training School will serve six months with the nurse of the association, thereby obtaining valuable experience in general nursing and in obstetric work in the homes of the poor in the city of Concord. This service has been in successful operation since January 1.

NEW YORK.—*Reorganization of the State Pathological Institute.*—A plan of reorganization of the Pathological Institute of the New York State Hospitals undertaken by the State Commission in Lunacy is gradually taking shape. It is the aim of the reorganized institute to carry on work in the sciences correlated with psychiatry, according to the original scheme, but with a few modifications calculated to meet more immediately the needs of the hospitals and to meet some of the criticisms of the former plan. Original research in the various sciences having a bearing upon the subject of insanity will go on as before, but in addition the institute will be utilized to give special instruction in clinical psychiatry, as well as methods of scientific research to the physicians on the staffs of the hospitals for the insane and to young men about to take up an asylum career. In order to obtain this clinical experience the institution is to be connected with one of the asylums on Ward's Island, and until such time as a reception hospital for the insane can be established in the city of New York.

The Commission in Lunacy has established an advisory board consisting of the following: J. McKeen Cattell, professor of psychology, Columbia University; James Ewing, professor of pathology, medical department of Cornell University; Dr. Christian A. Herter, professor of pathological chemistry, Bellevue and University Medical College; Herman C. Bumpus, assistant to the president of the American Museum of Natural History, to represent the department of general biology; Dr. Henry Hun, professor of the diseases of the nervous system, Albany Medical College, to represent neurology and general clinical medicine; Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital, at Poughkeepsie, and Dr. A. E. Macdonald, superintendent of the Manhattan State Hospital, East, to represent the State hospitals; Dr. Frederick Peterson, president of the lunacy commission, a member ex-officio. All of the appointments to the advisory board are permanent except two. The two superintendents of asylums on the board were selected by the 14 asylum superintendents of the State at a meeting held in Buffalo, September 28, for a term of two years only, thus permitting all of the asylums to be represented in rotation on the board. All of the gentlemen selected have accepted their appointments. They serve the State without charge.

—*Willard State Hospital, Willard.*—Diphtheria still prevails at this hospital, forty-six (46) cases having developed during the year just ending. The disease has been largely confined to the employees, especially the attendants, though the patients have been by no means exempt. Treatment by means of antitoxin has been applied early, and there has been but one death, the diagnosis in this case having been delayed because of the absence of the diphtheria bacillus in the cultures.

The plumbing in the south wing of the main building, which was quite antiquated and defective, was torn out during the past summer and replaced with modern construction. Similar work is required in several of the other buildings.

A small addition has been made to the main building for the purpose of providing a room for detail clinical work. There is room in this annex for electrical apparatus and all the other paraphernalia of a modern clinic.

—*Middletown State Homeopathic Hospital, Middletown.*—A general and cold storage building has just been erected at a cost of about \$24,129.29. This was a much needed addition to the institution. A new bath tower, four stories in height, has been recently built adjoining one of the buildings of the female department, cost about \$11,665.80. Two new 250 K. W. dynamos have been installed.

—*Binghamton State Hospital, Binghamton.*—The new building to house the manufacturing departments is practically completed. The building is designed to accommodate the sewing, tailoring, shoe, harness, mattress, and general upholstery departments. A new telephone system has been installed in the hospital by the Wilhelm Telephone Co., of Buffalo, N. Y.; fire escapes have been erected on the north and south wings of the main building, and many of the buildings have been repainted and pointed up.

—*Gowanda State Homeopathic Hospital, Gowanda.*—The Commission in Lunacy has concluded to erect at this institution two wings, for men and women, respectively, of three stories each, at a cost of \$200,000.

—*Manhattan State Hospital, West, Ward's Island, New York City.*—A new dining room is in process of construction at the present time, adjoining the kitchen near the Verplanck building, which is intended to accommodate about four hundred patients. The three dining rooms now in use will be devoted to other purposes as soon as the new dining room is completed. A second new dining room now being built, is located near the old branch buildings, on the site of the old boiler house, which was burned a few years ago. This will do away with the ward dining rooms and the space thus secured will be utilized as sitting rooms.

The food conduit is progressing favorably. This is a much needed improvement, as the food can be more quickly delivered and will lose less heat during the transportation, than when conveyed by wagon. Food is now conveyed from kitchen No. 2, in the new building, to the dining rooms of the new branch, by means of hand trucks or wagons through the conduit, which leads from the kitchen and joins the basement under the new branch wards, 13, 14, 15 and 16. Food is thus also conveyed to the old branch buildings, now known as wards 17, 18, 19, 20 and 21. This has been found to be a great advantage over the old system of delivering food by wagon.

The annex building has been painted outside and is being thoroughly renovated, by being replastered and painted inside.

The four pavilions occupied by the men have been painted inside and outside and spray baths have been put in each. One of the four pavil-

ions is being used as a dining room for the men patients and the wards and dining-room services are cared for by women patients.

The staff house has been painted inside and outside and additional furniture supplied throughout.

Wards 11 and 12 being isolated, are now being used for the care of the phthisical patients; ward 11 on the first floor being used, one part as a sitting room and the other part as a dining room; the more feeble cases occupying the second floor.

A solarium, two stories high has been built on the south side of these wards and occupied within the past two weeks. The south side and both ends are enclosed with glass. The second floor is used as a dormitory and is occupied by twenty bed-ridden patients. The construction is such that the windows can be removed in the summer and a sufficient number can be opened in winter to permit of airing and carrying out of the improved method of treating phthisical cases. During the summer months our phthisical cases sit outdoors under a tent or in the shade of trees during the entire day, when the weather will permit; and are isolated from other patients.

A sea wall is now being built to protect a portion of the beach south of the boiler house. Plumbing in the Verplanck building is being renewed at the present time. A system for heating flatirons by electricity is now being installed in the laundry and a small number have already been placed in the sewing room for use in pressing garments. The small old-fashioned windows of the single rooms in the old branch building are being closed up and large windows are being built below them, thus rendering the building more modern in appearance and much more comfortable for the patients.

During the summer season the usual dances each week for the patients have been held, and on holidays, sports, in which they have taken part with much interest. Dramatic entertainments have been given also, and some stereopticon exhibitions. The patients have enjoyed the salt water bathing three times a week, and weekly excursions on the steamer "Wanderer" have afforded as much pleasure and amusement as anything else that has been provided. The trips are made alternately up the sound and down the river, toward the lower part of the city. Recently the 200 working men patients, all chronic cases, have been going on these excursions and show much appreciation. One feature of employment of women patients, not only for mental improvement, but to secure physical benefit from outdoor life, is the organization of lawn and garden parties, whereby the patients perform light work, such as pulling weeds, picking berries, beans, small fruit, raking leaves, etc. These patients became brown from exposure to the sun and weather and in many cases manifest a marked mental and physical improvement.

On September 4, fifteen women patients were transferred from this institution to Central Islip. The buildings at Central Islip will be ready sometime during the next month to receive 830 patients now located on Blackwell's Island. The buildings now used as a branch of this hospital,

will then be turned over to the Department of Charities from whom they were leased for five years by the State.

On May 22, 1901, twenty-seven women attendants were graduated from the training school as nurses, and received their diplomas.

—*Matteawan State Hospital, Fishkill Landing.*—James F. Howell resigned as steward at the Matteawan State Hospital, August 1, 1901. W. A. Thomas, resident steward at the L. I. State Hospital at Kings Park, transferred as steward to the Matteawan State Hospital, Fishkill-on-Hudson, N. Y., August 15, 1901.

—*Dannemora State Hospital, Dannemora.*—The Dannemora State Hospital opened in November last, now cares for one hundred and twenty-five, which number is the full capacity of the building at the present time. This new hospital is designed to receive from the penal institutions of the State, only such men as have been convicted of a felonious crime, and who have become insane while serving sentence imposed for such crime. Criminals convicted of misdemeanors, and those who have been adjudged insane at the time of trial are committed to the Matteawan State Hospital as formerly.

By the opening of the Dannemora State Hospital the great overcrowding at the Matteawan hospital is relieved, and the State of New York returns to her position taken forty-six years ago when she made provision for the separate care of her convict insane—a position which was compromised fifteen years after it was taken, by laws permitting the commitment of non-convicted criminals to the convict asylum, then located at Auburn. At that time the total number of convict and criminal insane was comparatively small, and the two classes could be maintained in one institution, though they were kept apart as much as it is possible to keep those living under one roof. But the better recognition of mental disease in criminals and convicts has resulted in the abandoning the single institution provided for their care, and as patients of this class require such constant observation, it was considered unsafe and impracticable to group together any large number of them; hence the founding of the new hospital and the permanent separation of the convict from the criminal insane.

The hospital building as it stands to-day consists of a single two-storied pavilion, together with light, heat and power plants large enough to supply the demands of a hospital for five hundred patients to which size the building is ultimately to be enlarged.

During the summer the walls of an administration building have been erected; these will be roofed this autumn so that completion may be accomplished during the winter. A neat stable has been built, and the grounds have been graded and drained so far as limited funds would permit.

Dr. Robert B. Lamb, for nine years an assistant medical officer at Matteawan State Hospital is the medical superintendent; the assistant

physician is Dr. Charles H. North, and the medical interne is Dr. Amos T. Baker.

—*"Falkirk," Central Valley.*—A new stone, fire-proof building about 50 by 50 feet, which will increase the accommodations here for six more patients in the men's house, together with rooms for hydrotherapeutic treatment is being constructed. The Bacon Air Lift Company has built an artesian well with pumping engines, etc., which will supply 35,000 gallons of water per day.

—*Craig Colony for Epileptics, Sonyea.*—Two infirmaries, one for men, the other for women, are nearly completed and will probably be occupied by December 1 of the present year. They hold fifty patients each and are designed for the feeble and bed-ridden class, and contain isolation rooms in attached wings for those mentally disturbed.

A new filter bed, an acre in extent—an addition to the present intermittent filtration system—has been constructed and is in successful operation. The first bed, constructed in 1895, has constantly disposed of the sewerage from an average daily population of 700 persons with entire success.

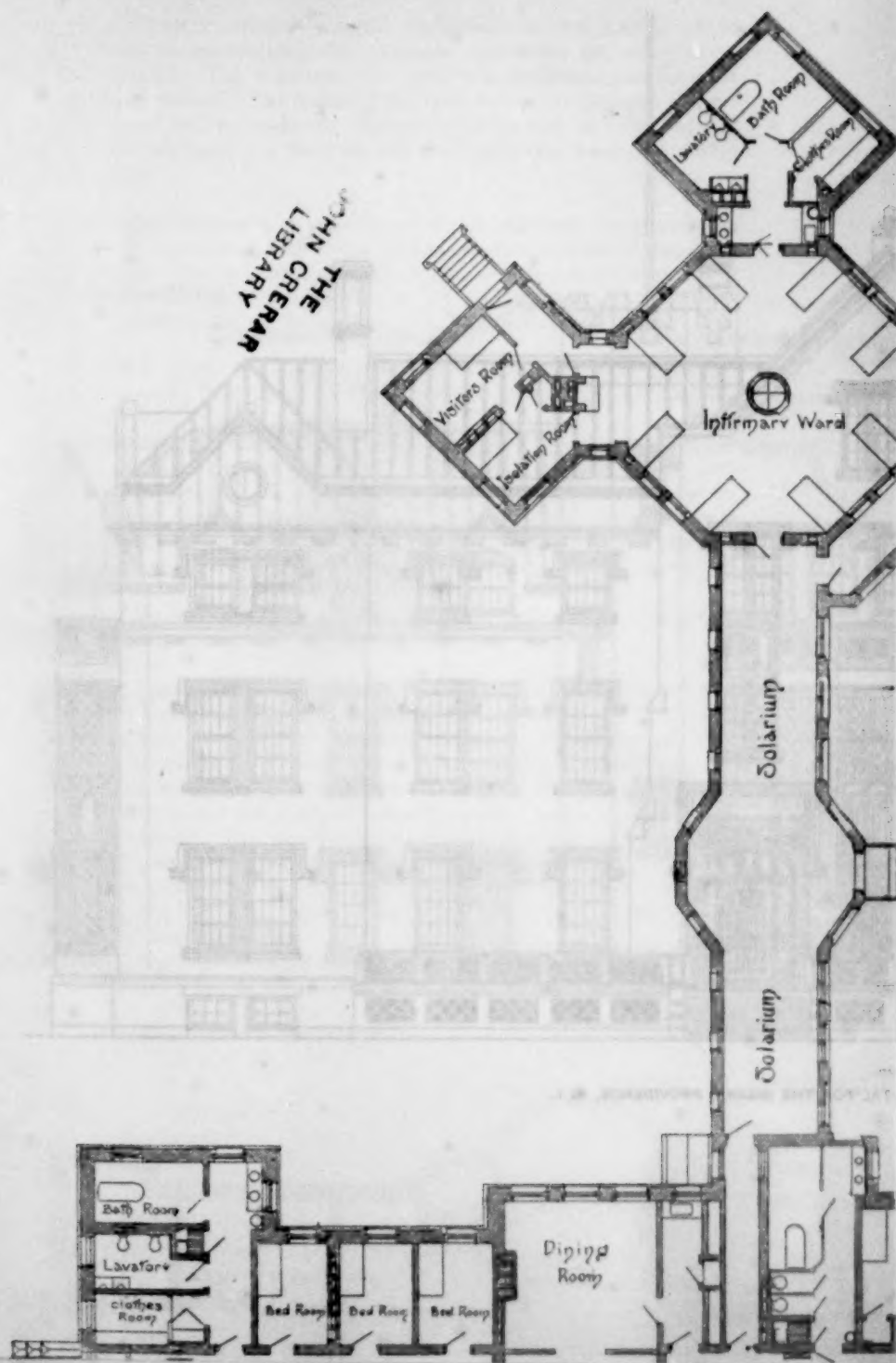
Plans and specifications are being made for additional cottages to hold 200 patients. This work is being done under an item of \$90,000 in the appropriation of this year. Plans and specifications are also being made for putting all electric light and telephone wires underground; for collecting and storing rain water for laundry purposes; wing to trades school building; for two silos; for a number of cottages for employees; for completing cold storage and warehouse building, and a number of other minor improvements.

Dr. L. Pierce Clark, first assistant physician, resigned and went to Europe in September to spend a year in study in Vienna and Berlin. Dr. Clark expects to enter private practice in New York City on his return. His work at the Colony during his six years' connection with it was valuable and he will be missed.

Dr. W. P. Spratling, superintendent of the Colony, is preparing by request a paper on "Drug Nostrums and their Dangers" for the June, 1902, meeting of the American Medical Association, and he would be glad to have physicians send him samples or call his attention to anything new or unusual in the way of such nostrums, or any literature about them that may come under their notice.

The census of the Colony on September 15 was 740; 436 males, 304 females.

—*Albany Hospital, Albany.*—The pavilion in connection with this general hospital, for the reception and observation of recent cases of insanity, and for emergencies in mental diseases, has been completed and will soon be ready for patients. The staff of the hospital has been increased by the appointment of Dr. J. M. Mosher, as attending specialist in mental diseases.



physician is Dr. Charles H. North, and the medical interne is Dr. Amos T. Baker.

—*"Falkirk," Central Valley.*—A new stone, fire-proof building about 50 by 50 feet, which will increase the accommodations here for six more patients in the men's house, together with rooms for hydrotherapeutic treatment is being constructed. The Bacon Air Lift Company has built an artesian well with pumping engines, etc., which will supply 35,000 gallons of water per day.

—*Craig Colony for Epileptics, Sonyea.*—Two infirmaries, one for men, the other for women, are nearly completed and will probably be occupied by December 1 of the present year. They hold fifty patients each and are designed for the feeble and bed-ridden class, and contain isolation rooms in attached wings for those mentally disturbed.

A new filter bed, an acre in extent—an addition to the present intermittent filtration system—has been constructed and is in successful operation. The first bed, constructed in 1895, has constantly disposed of the sewerage from an average daily population of 700 persons with entire success.

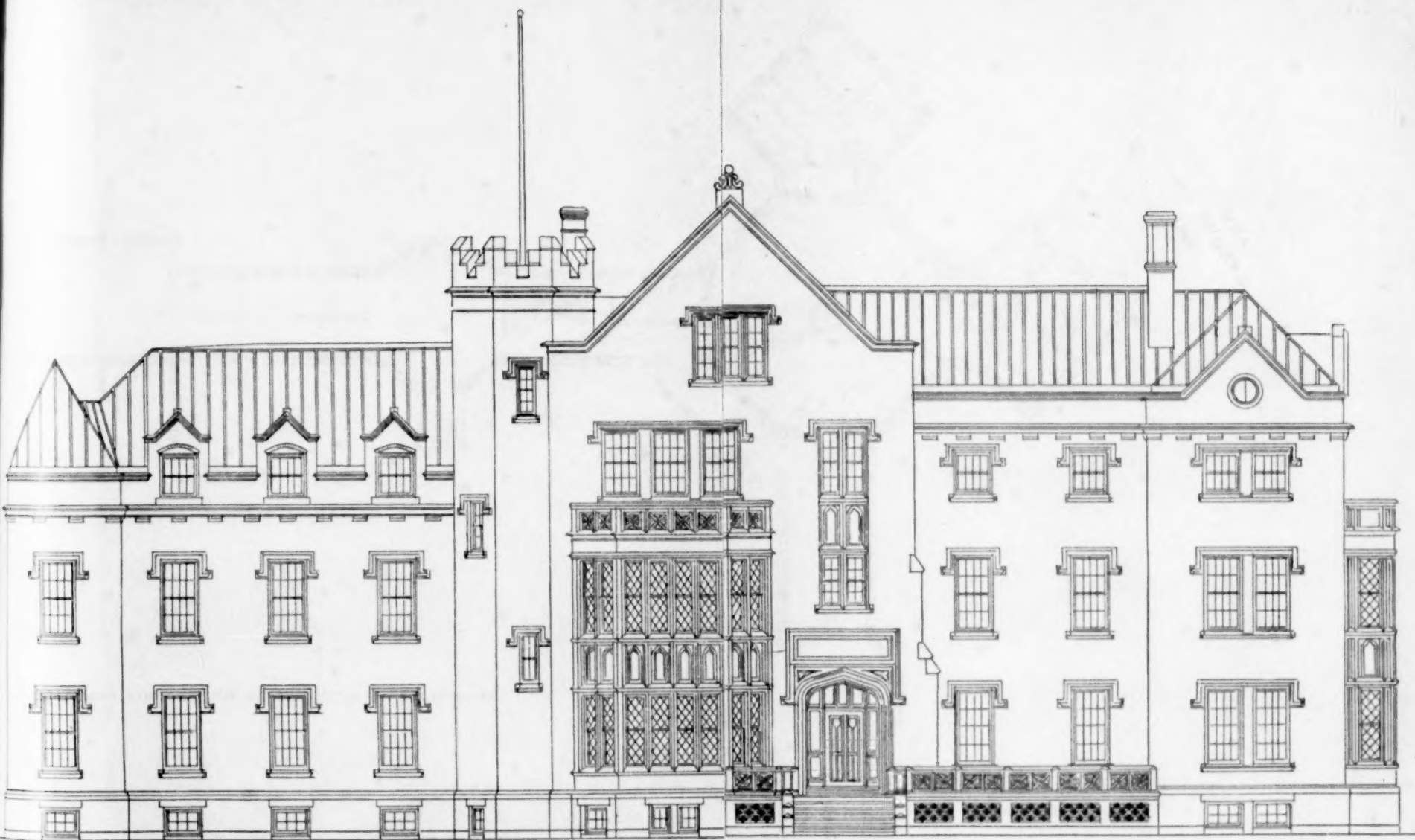
Plans and specifications are being made for additional cottages to hold 200 patients. This work is being done under an item of \$90,000 in the appropriation of this year. Plans and specifications are also being made for putting all electric light and telephone wires underground; for collecting and storing rain water for laundry purposes; wing to trades school building; for two silos; for a number of cottages for employees; for completing cold storage and warehouse building, and a number of other minor improvements.

Dr. L. Pierce Clark, first assistant physician, resigned and went to Europe in September to spend a year in study in Vienna and Berlin. Dr. Clark expects to enter private practice in New York City on his return. His work at the Colony during his six years' connection with it was valuable and he will be missed.

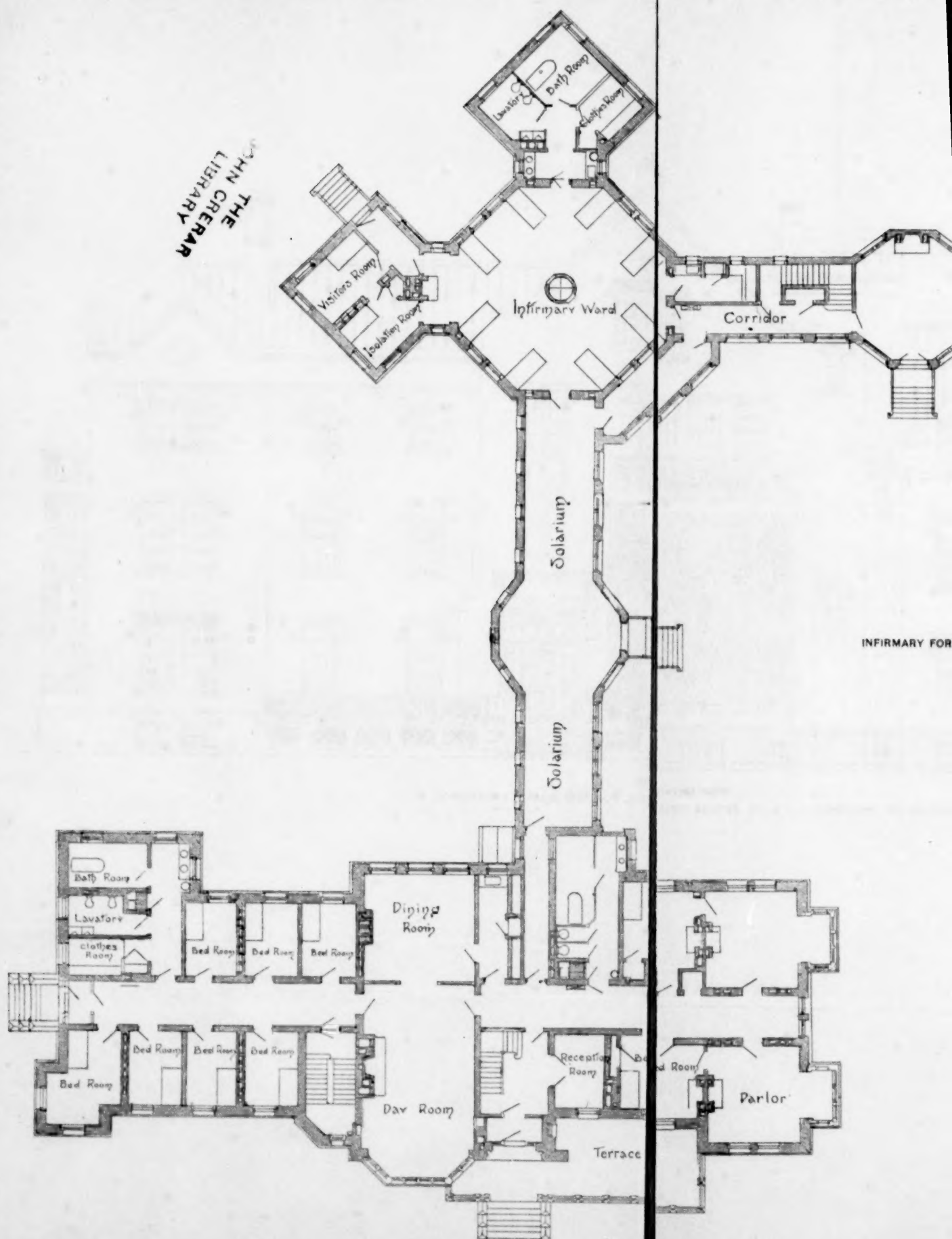
Dr. W. P. Spratling, superintendent of the Colony, is preparing by request a paper on "Drug Nostrums and their Dangers" for the June, 1902, meeting of the American Medical Association, and he would be glad to have physicians send him samples or call his attention to anything new or unusual in the way of such nostrums, or any literature about them that may come under their notice.

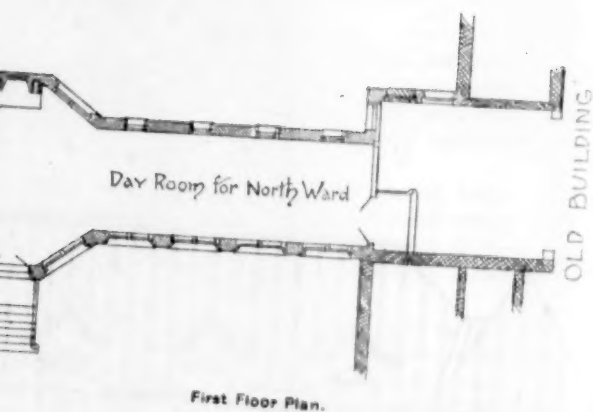
The census of the Colony on September 15 was 740; 436 males, 304 females.

—*Albany Hospital, Albany.*—The pavilion in connection with this general hospital, for the reception and observation of recent cases of insanity, and for emergencies in mental diseases, has been completed and will soon be ready for patients. The staff of the hospital has been increased by the appointment of Dr. J. M. Mosher, as attending specialist in mental diseases.



West Elevation.
BUILDING FOR DISTURBED PATIENTS, BUTLER HOSPITAL FOR THE INSANE, PROVIDENCE, R. I.





FOR THE BUTLER HOSPITAL FOR THE INSANE, PROVIDENCE, R. I.

NORTH CAROLINA.—*State Hospital, Goldsboro.*—The last Legislature of North Carolina appropriated fifty thousand dollars for the enlargement of this hospital. The purpose is to erect two buildings, one for men and one for women. The building for men is now in process of construction, and will be ready for occupancy by the first of next year. It is three stories high, one hundred and sixty-eight feet long, and thirty-six feet wide.

OHIO.—The trustees and superintendents of the State hospitals have organized in conference, which was held at the Toledo State Hospital on June 27, 1901. The special discussions of this session related to the need of a separate institution for the care of the criminal insane, and of hospitals or pavilions for the reception of acute cases.

—*Massillon State Hospital, Massillon.*—The assembly hall and employees' quarters building is completed and occupied. It will be dedicated soon. The building is 180 by 70 feet. The wings are used for employees, the first and third floors for domestic help and the second floor for nurses; one wing for men, the other for women. The central portion is the auditorium, 60 by 70 feet; it is surrounded on three sides by gallery. The stage is large and ample. This building also contains a lecture room, and two large reception rooms for the use of employees. In the basement are the drug room, gymnasiums, billiard rooms and bowling alleys.

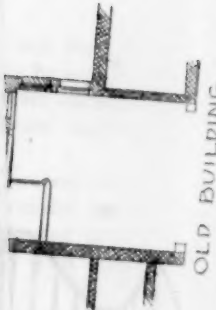
Two additional cottages for men patients are almost completed. These will accommodate 75 patients each.

RHODE ISLAND.—*Butler Hospital, Providence.*—The formal opening of the Weld House, the recently completed addition to the men's ward at Butler Hospital occurred on Thursday afternoon, September 26, 1901, when invited guests were received and inspected the new buildings.

The Weld House is the gift of Mrs. William G. Weld of Boston. It is a memorial to her late husband, who was formerly one of the trustees of the institution. The significance of the memorial is well expressed in a tablet that adorns the wall of one of the corridors: "The gift of Mrs. William G. Weld, in order that the name of her husband may be associated with the great charity he gave his care and the living sympathies of a philanthropist."

A handsome representation of the Weld coat of arms, which adorns the walls of the parlor, will serve as a lasting reminder of the personality of the donor and of the work of her husband for the Butler Hospital.

In the late fall of 1899 Mrs. Weld announced to the trustees that she would give to the hospital the sum of \$85,000 for the purpose of erecting a building to be known as the Weld House. The gift was gladly accepted and ground was broken for the laying of the foundation in May, 1900. The construction and equipping of the building required a little more than a year.



E, PROVIDENCE, R. I.

on.
ITAL FOR THE INSANE, PROVIDENCE, R. I.

NORTH CAROLINA.—*State Hospital, Goldsboro.*—The last Legislature of North Carolina appropriated fifty thousand dollars for the enlargement of this hospital. The purpose is to erect two buildings, one for men and one for women. The building for men is now in process of construction, and will be ready for occupancy by the first of next year. It is three stories high, one hundred and sixty-eight feet long, and thirty-six feet wide.

OHIO.—The trustees and superintendents of the State hospitals have organized in conference, which was held at the Toledo State Hospital on June 27, 1901. The special discussions of this session related to the need of a separate institution for the care of the criminal insane, and of hospitals or pavilions for the reception of acute cases.

—*Massillon State Hospital, Massillon.*—The assembly hall and employees' quarters building is completed and occupied. It will be dedicated soon. The building is 180 by 70 feet. The wings are used for employees, the first and third floors for domestic help and the second floor for nurses; one wing for men, the other for women. The central portion is the auditorium, 60 by 70 feet; it is surrounded on three sides by gallery. The stage is large and ample. This building also contains a lecture room, and two large reception rooms for the use of employees. In the basement are the drug room, gymnasiums, billiard rooms and bowling alleys.

Two additional cottages for men patients are almost completed. These will accommodate 75 patients each.

RHODE ISLAND.—*Butler Hospital, Providence.*—The formal opening of the Weld House, the recently completed addition to the men's ward at Butler Hospital occurred on Thursday afternoon, September 26, 1901, when invited guests were received and inspected the new buildings.

The Weld House is the gift of Mrs. William G. Weld of Boston. It is a memorial to her late husband, who was formerly one of the trustees of the institution. The significance of the memorial is well expressed in a tablet that adorns the wall of one of the corridors: "The gift of Mrs. William G. Weld, in order that the name of her husband may be associated with the great charity he gave his care and the living sympathies of a philanthropist."

A handsome representation of the Weld coat of arms, which adorns the walls of the parlor, will serve as a lasting reminder of the personality of the donor and of the work of her husband for the Butler Hospital.

In the late fall of 1899 Mrs. Weld announced to the trustees that she would give to the hospital the sum of \$85,000 for the purpose of erecting a building to be known as the Weld House. The gift was gladly accepted and ground was broken for the laying of the foundation in May, 1900. The construction and equipping of the building required a little more than a year.

The Weld House is an addition to the main men's ward, with which it is connected by corridors. So far as arrangement and equipment are concerned it is complete in itself. The house was erected with a view to the accommodation of four distinct classes of patients: first, the overflow of regular patients from the main men's wards; secondly, it was to contain an infirmary for bed-ridden patients; thirdly, it was to furnish separate accommodations for noisy patients; and fourthly, it was to contain especially well-fitted suites for the use of patients whose families could afford to pay for them.

The Weld House is constructed of brick and stone in the Tudor-Gothic style of architecture and in such a manner as to make it harmonize with the other buildings, which it joins at the northeast side of the latter. At this point a glazed corridor extends toward the northeast for a distance of some 80 feet. Joining this corridor at right angles is a second glazed corridor and at the angle there stands a two-storied octagonal structure, which is to be entirely given up for use as an infirmary for the bed-ridden patients. The second corridor mentioned is fitted up as a parlor for a "sunning room." At the end of this corridor and parallel to the older building is the three-storied structure, 45 by 120 feet in size, which comprises the main part of the Weld House. Within the three sides of a quadrangle formed by the two corridors and the structure last mentioned, is a beautifully laid out garden, 80 feet square, which adds much, not only to the exterior effect of the new building, but to the cheerfulness of its interior as well.

The entrance to the main structure is on the west side, and opens directly into that part of the building which is to be devoted to the use of wealthy patients. The suites of rooms in this part of the building are complete in every detail. Arrangements will be made for the patients to take their meals in private. In the rear of these private suites, and taking up perhaps two-thirds of the building, are the quarters for noisy patients. These are separated from the private suites by a very thick wall, so constructed that the noise will in no way make itself known to the private suites. These apartments for noisy patients are complete in themselves, so that it will be unnecessary for the patients to go into any other part of the building. There are a dining room, a day room, bath rooms, and everything that is essential for the comfort and health of the patients.

The entire first and second floors of the main part of the building will be devoted to the uses noted, and the third floor will be reserved for the nurses. This nurses' dormitory, like all the other divisions of the new building, is complete in itself and in it everything is so arranged as to give the attendants the greatest possible amount of comfort when off duty.

The Weld House increases the capacity of the men's ward to about 200 patients.

The plans for the building were drawn by Hoppin & Ely, architects, of Providence, and the construction was carried on under the supervision of that firm.

VIRGINIA.—*Central State Hospital, Petersburg.*—The annual report of the Superintendent, Dr. W. F. Drewry, shows that the year has been a very successful one. 327 patients had been received, there were present during the year 1,195 patients, and of these 89 died and 111 were discharged. At end of year there were 987 remaining in the hospital. The rate of mortality was 7.4 per cent. on the whole number treated. The report lays special stress on the employment of patients. An immense amount of work had been done in the broom-shops, mattress shop and on the farm. There were at the end of the year no colored insane in any of the jails. In the colored population of the State the ratio of insane is one to 650, while the whites it is one to 595.

The report of the farm shows that that department has net good results to the hospital. A vast amount of improvement has been made in and around the hospital.

The financial status of the hospital has never been in more satisfactory condition. The cost per capita was \$93.28. The Hospital has in bank to its credit \$4,594.52.

The Legislature is called upon to appropriate for the next two years \$244,000 for all purposes, including support, additional accommodations and improvements.

Appointments, Resignations, Etc.

ANDREWS, DR. ROBERT M., resigned as Medical Interne at the Willard State Hospital, Willard, N. Y.

APPLEGATE, DR. CHARLES H., formerly First Assistant Physician at the Iowa Hospital for the Insane, Clarinda, Iowa, elected Superintendent of the Iowa Hospital for the Insane, Mt. Pleasant, Iowa.

BARTLETT, DR. P. CHALLIS, appointed Assistant Physician at the Danvers Insane Hospital, Hathorne, Mass.

BROWNIGG, DR. ALBERT E., resigned as Second Assistant Physician at the New Hampshire State Hospital, Concord, N. H.

CLARK, DR. L. PIERCE, resigned as First Assistant Physician at Craig Colony, Sonoma, N. Y.

DRYSDALE, DR. H. H., appointed Assistant Physician at the Massillon State Hospital, Massillon, Ohio.

EMRICH, DR. E. L., formerly First Assistant Physician at the Cleveland State Hospital, appointed First Assistant Physician at the Massillon State Hospital, Massillon, Ohio.

FINDLEY, DR. H. P., resigned as First Assistant Physician at the Massillon State Hospital, Massillon, Ohio.

FOLEY, DR. E. O., formerly Second Assistant Physician, promoted to be First Assistant Physician at the Illinois Northern Hospital for the Insane, Elgin, Ill.

FRANCISCO, DR. DAVID E., resigned as Assistant Physician at the Middletown State Homeopathic Hospital, Middletown, N. Y.

GILLESPIE, DR. EDWARD, promoted to be Assistant Physician at the Binghamton State Hospital, Binghamton, N. Y.

GILLETTE, DR. P. F., appointed Assistant Physician at the Illinois Northern Hospital for the Insane, Elgin, Ill.

HANES, DR. EDWARD L., Junior Assistant Physician, transferred from the Craig Colony to the Hudson River State Hospital, Poughkeepsie, N. Y.

- HINDLEY, DR. M. L., resigned as Assistant Physician at the Massillon State Hospital, Massillon, Ohio.
- JENKS, DR. FRANK H., resigned as First Assistant Physician at the Illinois Northern Hospital for the Insane, Elgin, Ill.
- LUCAS, DR. GEORGE N., appointed Second Assistant Physician at the Illinois Northern Hospital for the Insane, Elgin, Ill.
- MACCOT, DR. CECIL, resigned as Assistant Physician at the Binghamton State Hospital, Binghamton, N. Y.
- MILLER, DR. H. W., resigned as Junior Assistant Physician at the McLean Hospital, Waverley, Mass.
- MONTGOMERY, DR. WILLIAM H., appointed Medical Interne at the Willard State Hospital, Willard, N. Y.
- MOORE, DR. EMMA W., appointed Junior Assistant Physician at the McLean Hospital, Waverley, Mass.
- O'FERRALL, DR. CHARLES, resigned as Assistant Physician at the State Hospital for Insane, No. 2, St. Joseph, Mo.
- SANER, DR. W. F., appointed First Assistant Physician at the State Lunatic Asylum, Little Rock, Ark.
- SHANAHAN, DR. W. T., promoted to be Junior Assistant Physician at the Craig Colony, Sonoma, N. Y.
- SIMCOE, DR. C. B., formerly Assistant Physician at the State Hospital for Insane, No. 2, St. Joseph, Mo., appointed Superintendent of the Home for Feeble-Minded and Epileptics, Marshall, Mo.
- SMITH, DR. B. H., appointed Assistant Physician at the State Hospital for Insane, No. 2, St. Joseph, Mo.
- SMITH, DR. J. C., re-appointed Assistant Physician at the State Hospital for Insane, No. 2, St. Joseph, Mo.
- THAYER, DR. THOMAS M., appointed Medical Interne at the Middletown State Homoeopathic Hospital, Middletown, N. Y.
- TURNER, DR. REEVE, re-appointed Junior Physician at the Middletown State Homoeopathic Hospital, Middletown, N. Y.
- VALDEG, DR. M. NELSON, formerly First Assistant Physician at the Iowa Hospital for the Insane, Independence, Iowa, elected to be Superintendent of the Iowa Hospital for the Insane, Cherokee, Iowa.
- WALKER, DR. CHARLES S., appointed Second Assistant Physician at the New Hampshire State Hospital, Concord, N. H.
- WALKER, DR. IRVING LEE, appointed Medical Interne at the Binghamton State Hospital, Binghamton, N. Y.
- WHITE, DR. R. L., resigned as First Assistant Physician at the State Lunatic Asylum, Little Rock, Ark.
- WOODMAN, DR. ROBERT C., promoted to be Second Assistant Physician at the Middletown State Homoeopathic Hospital, Middletown, N. Y.